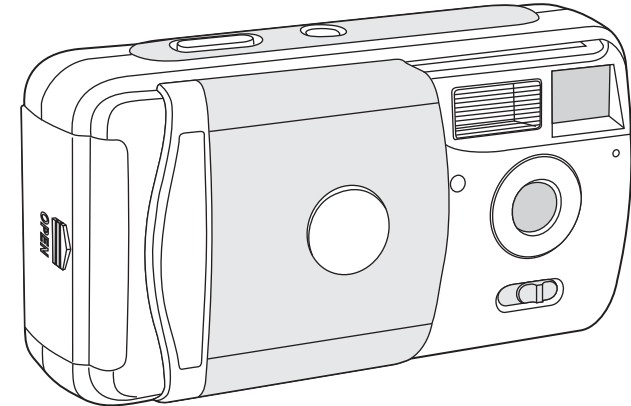


Digital Camera

HDC-401EX

Thank you for purchasing an HDC-401EX digital camera.
Before using the camera, please read this user manual carefully
to ensure proper use of the camera.



Hitachi Living Systems

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See Using the Camera in the
Quick Start Guide P 99

i.mega

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Overview


■ Safety Precautions


Use of Symbols

Various symbols are used throughout this user manual. They are designed to help you understand the correct use of the product and to protect you, other persons and property from danger and damage. Their conventions and meanings are explained below.

Please understand the meaning of each symbol before reading the main text.

The following symbols/words are used to indicate the degree of danger or the extent of damage that may result from use that is contrary to the given instructions.

 **Warning** Improper use that is contrary to the given instructions may result in death or serious bodily injury.

 **Caution** Improper use that is contrary to the given instructions may result in bodily injury or damage to property.


The following symbols are used to explain specific instructions.


 This symbol indicates a prohibited action that must not be performed.


 This symbol indicates a required action that must be performed.


Be sure to read the following precautionary information to ensure correct and safe use of the product.

Warning


 **Remove the batteries in case of an abnormality.**
Continuing to use the camera in an abnormal condition, such as if it should emit smoke or give off an odor, may result in fire or electric shock.
● Consult the store from which you purchased the camera.


 **Never take pictures while moving.**
Do not take pictures while walking, driving a car or riding any other vehicle. You may trip and fall, or a traffic accident may result.

 **Do not place the camera on an unstable surface.**
The camera may tip over or drop, causing bodily injury.


 **Protect the camera against entry of water or foreign substances.**
If water or a foreign subject should enter the camera, remove the batteries immediately. Continuing to use the camera may cause a short circuit, resulting in fire or electric shock.
● Consult the store from which you purchased the camera.


 **Do not use the camera in a bath or shower.**
Fire or electric shock may result.


 **Never attempt to disassemble or modify the camera (never open the case). If you should accidentally drop the camera or otherwise break the case, do not use the camera.**
Fire or electric shock may result.
● Consult the store from which you purchased the camera.

 **Do not throw the camera or the batteries into a fire.**
The camera and/or batteries may rupture and explode, causing fire or bodily injury.

 **Do not mix batteries of different types or use a combination of old and new batteries. Do not use batteries other than the specified types.**
The batteries may rupture and explode, causing fire or bodily injury.


 **Be aware of the hazards associated with alkaline batteries.**
If the fluid from an alkaline battery should come in contact with your eyes or skin, immediately rinse away the fluid under running water and seek medical attention. The failure to do so may result in blindness or other bodily injury.


 **Do not attempt to disassemble, process or heat the batteries. Do not drop the batteries or otherwise subject them to impact. Do not attempt to recharge lithium batteries or alkaline batteries. Do not store the batteries together with metal objects.**
The batteries may rupture and explode, causing fire or bodily injury.


 **Do not use the batteries in any manner not specified in this manual.**
Set the batteries by aligning their polarities (⊕, ⊖) as specified.


Caution

 **Do not use any type of connector other than as specified.**
Fire or electric shock may result.

 **Save important images in a computer.**
The images captured by the camera may be lost due to weak batteries, malfunction and subsequent repair, etc.

 **Do not use the camera in places where the use of digital cameras is prohibited, such as on an airplane.**
An accident may occur.

 **Do not place the camera in places exposed to significant amounts of soot, dust, steam or high humidity.**
Fire or electric shock may result.

 **Do not place the camera in places subject to extremely high temperatures.**
Do not place the camera near a heater, on an electrically heated carpet, inside a car with the windows closed, or under direct sunlight. Fire may result.

 **Do not place any article on the camera.**
The camera may tip over or the article may drop, causing bodily injury.

■ **What You Should Know**

Note

- The contents of this manual are subject to change without prior notice.
- Unauthorized reproduction of all or part of this manual is prohibited.
- Hitachi Living Systems shall not be liable whatsoever for any damage, lost profit or claim by a third party arising from the use of the digital camera or software provided with the camera.
- Hitachi Living Systems shall not be liable whatsoever for any damage, lost profit, etc., arising from a memory erasure due to a product malfunction, repair or any other reason.

Copyrights

The images you have taken with your digital camera cannot be used for purposes other than your own personal enjoyment without prior permission from the legal copyright holders. Note that some performances, shows, exhibits, etc., prohibit photographing/videotaping even for the personal enjoyment of the viewer.

Trademarks

- Microsoft and Windows are registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.
- The SD logo is a registered trademark.
- Other company or product names referred to in this manual may be trademarks or registered trademarks of their respective companies and are hereby acknowledged. They are not accompanied by a TM or ® symbol in this manual.

■ Notes on Handling the Camera

Environment of Use

Your digital camera can be used within the temperature range of 0°C to 40°C (non-condensing).

If the camera is moved from a cold place directly to a warm place, water droplets may form inside or outside the camera due to condensation. Condensation is a common cause of defects and malfunctions, so please exercise caution.

Trial Shots

Always take trial shots before photographing/videotaping important occasions, and thereby ensure that the images are recorded correctly.

The two AA alkaline dry batteries included in the package are provided to help you check the basic operations of the digital camera. If you are shooting real subjects, replace them with commercial AA alkaline dry batteries or AA nickel metal hydride batteries.

This digital camera CANNOT be used with AA manganese dry batteries.

Data Error

- This digital camera uses precision electronic components. Refrain from the following operations, as they may damage the data stored in the camera:
 - Disconnecting the USB cable during data transfer.
 - Removing the batteries or disconnecting the AC adapter (sold separately) while data is being recorded or transferred via USB connection.
 - Connecting or disconnecting the AC adapter (sold separately) while data is being recorded.
 - Continuing to use batteries that have already been consumed.
 - Inserting or removing the memory card while the camera's power is on.
 - Performing other abnormal operations
- We recommend that you back up important data on another media (MO disk, Hard Disk, CD-R, etc.), so that you can recover the data in case it is accidentally erased or damaged while still in the camera.

LCD Monitor

- The image on the LCD monitor may become vague at nighttime or in a dark room because the sensor cannot receive sufficient lighting. This is not a malfunction. Move to a place that provides sufficient lighting for proper operation.
- Do not press the LCD monitor with excessive force. The display may become uneven or the LCD panel may be damaged.
- The image on the LCD monitor may become darker under the sun or other strong light. This is not a malfunction.
- The LCD monitor is manufactured with a high degree of technical precision. However, the monitor may temporarily show black dots, or white, red, blue or green dots may appear for a longer period. This is not a malfunction. These dots will not be recorded along with the subject images.
- Sometimes the area around the LCD monitor may become hot while the camera is in use. This is not a malfunction.

SD Memory Card

- SD memory cards (sold separately) can be used with the HDC-401EX (32, 64, 128, 256 and 512 MB compatible). **Please be sure to read the user manual attached to the SD memory card.**
- Electrostatic and electrical noise may erase or damage the recorded data. We recommend that you back up important data on another media (MO disk, Hard Disk, CD-R, etc.).
- Keep the contact area of the memory card free from dust or deposits of foreign matter. To remove soiling from the contact area, gently wipe the surface using a dry, soft cloth, etc.

Maintenance

- The camera cannot perform its best with dust adhering to the surface of the lens. To clean the lens, remove dust with a blower and then gently wipe the surface with a dry, soft cloth.
- Do not wipe the exterior surface of the camera using thinner, benzine, etc. The coating may come off or become discolored.

Product Overview

The HDC-401EX not only offers high image quality with a built-in CCD image sensor of 4 million pixels, but it is also compact enough to be carried nearly anywhere you go. The key features are described below:

Key Features

- Built-in CCD image sensor of 4 million pixels (A4 size also supported)
 - Easy-to-see 1.5" TFT color LCD monitor
 - Internal 16 MB flash memory & "copy to SD card" function for secure data storage
 - SD memory card for easy image capture (built-in SD memory card slot) (*1)
 - Video output terminal lets the whole family enjoy the resulting images.
 - Close-up mode (approx. 55 to 110 cm) ideal for self-portraits
 - Several scene modes to choose from for shooting sports, night scenes, portraits, landscapes and back light
 - Black & white and sepia modes for an artistic finish
 - Grid display mode for easy layout settings
 - Video capture function
 - The "My Camera" function lets you set your favorite image as the startup screen.
 - Diverse playback modes (single, zoom (200, 300 or 400%), index (9 divisions), and video)
 - AC adapter socket lets you use the camera for hours without worrying about batteries (*2)
 - The all-in-one package means you can take pictures right away.
- (*1) SD memory cards are sold separately.
(*2) The AC adapter is sold separately.

- P65
- P23
- P43
- P31
- P55
- P61
- P15
- P33
- P72
- P35
- P51
- P9

What You Will Find in the Package

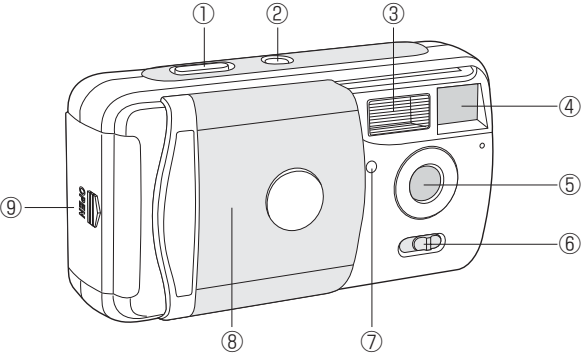
- Confirm that the following accessories are found in the package together with the digital camera:
- Camera case
 - Neck strap
 - Dedicated USB cable
 - Dedicated video cable
 - Installation CD-ROM (for Windows 98/98SE)
 - AA alkaline dry batteries (2)
 - Cleaner
 - User manual

The AC adapter and SD memory cards are purchased separately.
Using an SD Memory Card P23 Using the AC Adapter P51

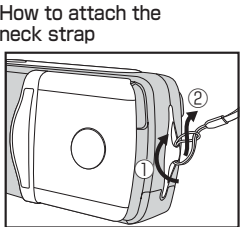
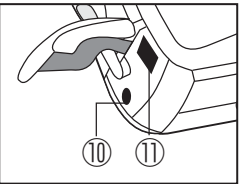
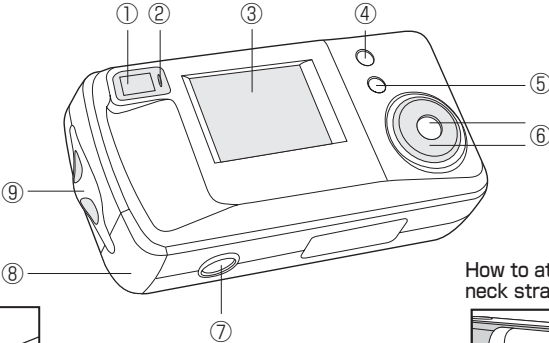
The dedicated USB cable and video cable are hereinafter referred to as the "USB cable" and "video cable," respectively.

Names of Parts

- Front**
- ① Shutter
 - ② Power switch
 - ③ Flash
 - ④ Viewfinder
 - ⑤ Lens
 - ⑥ Distance selector switch
 - ⑦ Self-timer lamp (red)
 - ⑧ Lens cover
 - ⑨ Battery/SD memory card cover



- Rear**
- ① Viewfinder
 - ② Viewfinder lamp (green/red)
 - ③ LCD monitor
 - ④ MODE button
 - ⑤ MENU button
 - ⑥ Control panel
 - ⑦ Threaded hole for mounting tripod
 - ⑧ Interface cover
 - ⑨ Neck strap attachment
 - ⑩ DC input terminal
 - ⑪ USB/video output terminal



MODE Button

Press this button to switch to a different operating mode.

<Still Image Capture mode>



<Playback mode>



To take video, start at Capture Menu. **P33**

MENU button

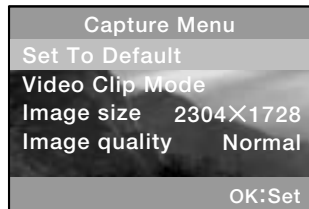
Press this button to display the menu hierarchy (setting items) in each mode.

Pressing the MENU button while a menu is displayed exits the menu display.

<Still Image Capture mode>



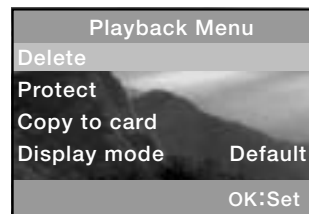
<Capture Menu>



<Playback mode>



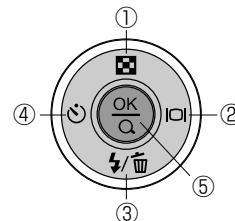
<Playback Menu>



Control Panel

Each button on the control panel has multiple functions. Understand these functions thoroughly before you start operating the buttons.

Note that [▲], [▼], [◀] and [▶] are not displayed on the camera (control panel).



No.	Button name	Function
①	[▲] Up button	Use this button to select the next item up in each menu screen.
	[Index] Index button	Use this button to activate the Index Playback mode. P37
②	[▶] Right button	Use this button to select the item to the right in a menu screen.
	[Display] Display button	Use this button to switch the LCD monitor display in the Capture mode. P15
③	[▼] Down button	Use this button to select the next item down in a menu screen.
	[Flash] Flash button	Use this button to select each flash mode in the Still Image Capture mode. P30
	[Delete] Delete button	Use this button to delete the image currently played in the Playback mode. P39
④	[◀] Left button	Use this button to select the next item on the left in a menu screen.
	[Self-timer] Self-timer button	Use this button to set the self-timer in the Still Image Capture mode. P64
⑤	[OK] OK button	Use this button to confirm your selection in a menu screen.
	[Digital zoom] Digital zoom button	Use this button to activate the digital zoom in the Still Image Capture/Playback modes. P32 P36

Menu Screen Operations

The menu screens can be operated in the following ways:

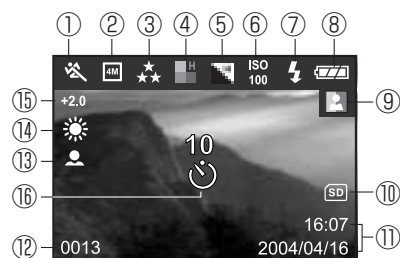
- Select the item using [▲] [▼], select the setting using [◀] [▶] and then press MENU to exit the menu (confirm the selection).
- Select the item using [▲] [▼], display the detail menu by pressing [OK], select the setting using [▲] [▼] and then confirm the selection by pressing [OK].
Follow the operation guide displayed on each subsequent menu screen.

The **MODE/MENU** button and control panel operations are hereinafter simplified as follows:

- Press the **MODE** or **MENU** button → Press **MODE** or **MENU**.
- Press the [▲], [▼], [◀] or [▶] direction button → Press [▲] [▼] [◀] [▶].
→ Select [▲] [▼] [◀] [▶].
- Press the OK button → Press [OK].

LCD Monitor Display

Still Image Capture Mode Capturing Still Images P27



① Scene mode P55

(※Not displayed if **Auto** is selected)

- 🏃 Sports
- 🌙 Night Scene
- 👤 Portrait
- 🏔 Landscape
- 💡 Back Light

② Image size P52

- 4M 2304 × 1728 (Approx. 4 million pixels)
- 2M 1600 × 1200 (1.92 million pixels)
- 1.2M 1280 × 960 (Approx. 1.23 million pixels)
- 0.3M 640 × 480 (Approx. 310,000 pixels)

③ Image quality P52

- ★ Fine (Low compression (1/8) mode)
- ★ Normal (Standard compression (1/12) mode)
- ★ Economy (High compression (1/16) mode)

④ Saturation P60

- 🟢 High
- 🟡 Medium (※Not displayed if **Medium** is selected)
- 🔴 Low

⑤ Sharpness P59

- 🔴 High
- 🟡 Medium (※Not displayed if **Medium** is selected)
- 🔴 Low

⑥ ISO (capture sensitivity) P62

(※ Not displayed if **Auto** is selected)

- ISO 100 Equivalent to ISO100
- ISO 200 Equivalent to ISO200

⑦ Flash mode P30

- 🚫 Suppressed Flash mode
- ⚡ Auto mode
- 🚫 Red-Eye Reduction (Auto) mode
- ⚡ Forced Flash mode

⑧ Remaining battery power P18

- 🔋 Full battery power
- 🔋 Low battery power
- 🔋 Running out of battery
- 🔋 No battery
- 🔌 Displayed when the AC adapter (sold separately) is in use.

⑨ Color P61

- 🖨 Full Color (※Not displayed if **Full Color mode** is selected)
- 🖨 Black & White
- 🖨 Sepia

⑩ SD card mark P23

※Displayed when a SD memory card is in use.

⑪ Date&Time P20

⑫ Possible number of shots P97

⑬ Distance mode P31

(※Not displayed if the standard mode is selected)

⑭ White balance (※Not displayed if **Auto** is selected) P58

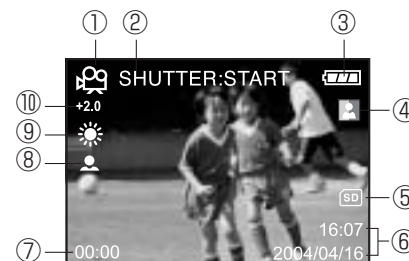
- ☀ Daylight
- ☁ Cloudy
- 🌅 Sunset
- 🔥 Tungsten
- 💡 Fluorescent

⑮ Exposure (EV) P57

(※Not displayed if **Auto** is selected)
-2.0 EV to +2.0 EV (set in 0.5-EV steps)

⑯ Self-timer P64

Video Capture Mode Capturing Videos P33



(※The same notes in the Still Image Capture mode apply when the applicable items are not displayed.)

① Video Capture mode icon

② Operation guide

③ Remaining battery power P18

④ Color P61

⑤ SD memory card icon P23

⑥ Date&Time P20

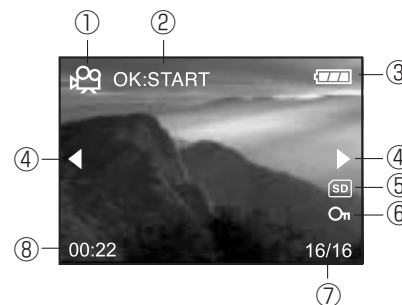
⑦ Elapsed time in seconds

⑧ Distance mode P31

⑨ White balance P58

⑩ Exposure (EV) P57

Playback Mode Viewing Still Images/Videos P35



① Video icon

※Displayed only when video is being played.

② Video operation guide

※Displayed only when video is being played.

③ Remaining battery power P18

④ Operation guide

⑤ SD memory card icon P23

⑥ Protect icon P69

⑦ Image number

Image number of currently displayed image / Total number of images

⑧ Elapsed time in seconds

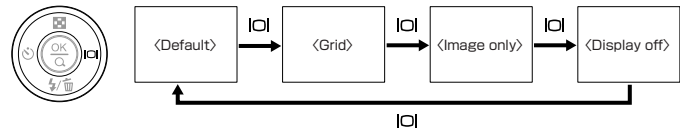
※This is displayed only during video playback.

Switching the LCD Monitor Display Mode

The LCD monitor display in each mode can be switched in the manner described below.

Still Image/Video Capture Mode

Press the display button ().



- <Default> : A standard display mode in which the basic settings are shown as icons.
- <Grid> : Grids are displayed to facilitate layout setting.
- <Image only> : Only the image is displayed.
- <Display off> : The LCD monitor display is turned off. Use this mode to capture an image by looking into the viewfinder.

- The Grid or Display off function cannot be used in the Video Capture mode.
- If the power is turned off or the camera is switched to the Playback mode, the selected LCD monitor display mode in the Still Image/Video Capture mode returns to Default.

Playback Mode

1

Press **MENU** in the Playback mode.

2

In the **Playback Menu** screen, select **Display Mode** using [▲] [▼] and then select **Default**, **Details** or **Image Only** using [◀] [▶].

[Details] ...Image size, ISO and other image-related information are displayed in this mode.

3

Pressing **MENU** saves the selection, and then the camera exits **Playback Menu**.

- The LCD monitor display mode in the Playback mode, selected here, is retained even after the power is turned off. However, **Setting to the Default P25** returns to **Default** mode.
- When video is played, image information is not displayed even when **Details** is selected.

Basic Operations

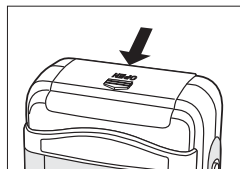
This chapter describes the basic operations of the HDC-401EX. Once you understand the content this chapter, you can operate the basic functions of the camera.

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Getting Ready

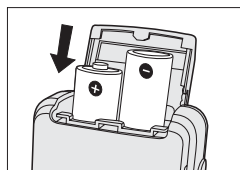
■ Setting the Batteries

1



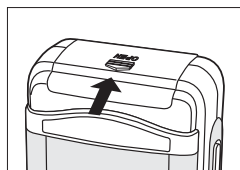
Open the battery/SD memory card cover by sliding it in the direction of the arrow.

2



Set the batteries by aligning the + and - marks with the marks in the battery compartment.

3



Close the battery/SD memory card cover.

- Turn off the camera power before replacing the batteries.
- Do not open the battery/SD memory card cover using a violent motion. The cover may be damaged.
- When opening/closing the battery/SD memory card cover, be careful not to drop the batteries.
- It is recommended that the batteries be removed and stored separately if the camera won't be used for a long period of time.

Applicable Batteries

The HDC-401EX can be used with AA alkaline dry batteries and AA nickel metal hydride batteries. (HR-3SB by Hitachi Maxell, Ltd. is recommended.)

See "Remaining Battery Power Display" for the remaining battery power displayed on the LCD monitor.

- AA manganese dry batteries cannot be used.
- The two AA alkaline dry batteries included in the package are provided to help you check the basic operations of the digital camera. If you are shooting real targets, replace them with commercial AA alkaline dry batteries or AA nickel metal hydride batteries.

Reference Battery Life (Kept with LCD monitor on and internal memory in use)

Battery type	Continuous	Cyclic		Playback time
		Flash	No flash	
AA alkaline dry battery LR6	Approx. 900 images	Approx. 200 images	Approx. 500 images	Approx. 190 minutes

- The figures in the table are reference values until the batteries go flat, assuming that images are captured in a standard environment in the 2304 x 1728/normal mode under the following conditions and played continuously at a speed of approximately 3 seconds per frame. They are not guaranteed. The actual figures may be lower, depending on the condition or environment in which the camera is used.
[Continuous] Images are captured continuously without flash.
[Cyclic] Images are captured by repeating the sequence of "Checking the subjects for 5 seconds" → "Capture" → "Playback for 5 seconds."
※In both modes, all images are erased once the memory gets full.
- Even when the power is off, the HDC-401EX carries a very small amount of current to back up the internal clock. It is recommended that the batteries be removed and stored separately if the camera won't be used for a long period of time.

Remaining Battery Power Display

Full battery power Low battery power

Running out of battery

(In this condition the flash or **Formatting P74** may not work properly. It is recommended that you replace the batteries with new ones.)

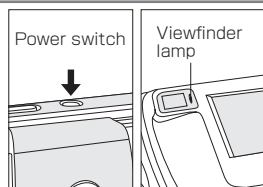
No battery. Replace with new batteries.

Displayed when the AC adapter (sold separately) is in use.

- The remaining battery power may not be displayed correctly, depending on the use condition and environment in which the camera is used.
- Use the display of remaining battery power only as a reference.

■ Turning On/Off the Power

1



To turn on the camera, press the power switch until the viewfinder lamp (red) illuminates.

When the camera is powered up, you will hear a “pee” sound and see the viewfinder lamp (green) illuminate.

2

To turn off the camera, press the power switch until the viewfinder lamp (green) goes out.

The viewfinder lamp (green) will go out, and the camera will power off.

- If the power switch is released too quickly, the power may not turn on/off. If the camera doesn't power up/down, press the switch for a longer period.
- If you are using your HDC-401EX for the first time or after a long period of storage with the batteries removed from the camera, the internal clock may be reset when the power is turned on, in which case the date/time setting screen will be displayed. Follow the instructions in **Setting the Date and Time** to set the correct date and time.

Power Off Time Function

If the camera is left with the power on without being operated, the power turns off automatically to save energy. The default setting is 3 minutes **P50**.

To use the camera again, press the power switch to turn on the power.

- The Power Off Time function is also effective when the camera is connected to the AC adapter (sold separately).
- If the camera is connected to a computer via the USB cable, the Power Off Time function does not work.
- If the Power Off Time function is activated while setting a given item and the power is then turned off, the item you were setting may not be saved. If the item isn't saved, set it again.

■ Setting the Date and Time

If you are using your HDC-401EX for the first time or after a long period of storage with the batteries removed from the camera, the internal clock may be reset when the power is turned on, in which case the date/time setting screen is displayed. Follow the instructions below to set the date and time.

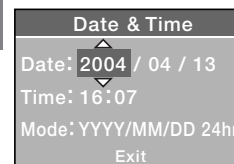
1



Use **[▲]** **[▼]** to select the part of **Date** you want to set, and then press **OK**.



2



Set the year, month and date using the control panel. Once the setting is complete, press **OK**.

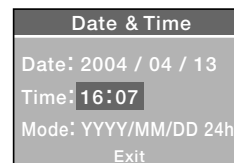
[▲] **[▼]** : Increase and decrease.

[◀] **[▶]** **OK** : Move through the items and confirm the set value.

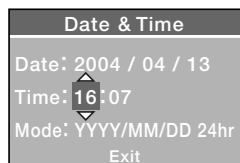
3



Use **[▲]** **[▼]** to select the part of **Time** you want to set, and then press **OK**.



4



Set the hours and minutes using the control panel. Once the minutes are set, press .

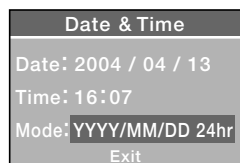
[▲][▼] : Increase and decrease.

[◀][▶] : Move through the items and confirm the set value.

5



Use [▲][▼] to select the part of **Mode** you want to set, and then press .



6

Select the desired display mode using [▲][▼] and then press .

YYYY/MM/DD/24 hr: The year, month, day and hours (in 24-hour format) are displayed in this order.
 YYYY/MM/DD/12 hr: The year, month, day and hours (in 12-hour format) are displayed in this order.
 DD/MM/YYYY/24 hr: The day, month, year and hours (in 24-hour format) are displayed in this order.
 DD/MM/YYYY/12 hr: The day, month, year and hours (in 12-hour format) are displayed in this order.
 MM/DD/YYYY/24 hr: The month, day, year and hours (in 24-hour format) are displayed in this order.
 MM/DD/YYYY/12 hr: The month, day, year and hours (in 12-hour format) are displayed in this order.

7



Select **Exit** using [▲][▼] and then press .

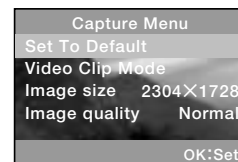


Adjusting the Date and Time

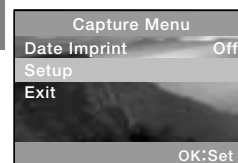
1



In the Still Image Capture mode, press **MENU** in to display the **Capture Menu** screen.



2



In the **Capture Menu** screen, select **Setup** using [▲][▼] and then press .

The Setup menu is displayed.

You can also select **Setup** from **Video Capture Menu** and **Playback Menu**.

3



In the **Setup** menu, select **Date & Time** using [▲][▼] and then press .

The date/time setting screen is displayed.

4

Follow the same procedure described earlier to adjust the date and time.

- Always check the clock display after switching the power source. The internal clock is backed up for approximately 10 minutes, but the date and time setting may be cleared depending on how long the batteries have been in use.
- The date/time and display mode you have just set is retained even after the power is turned off or **Setting to the Default P25** is executed.

■ Using an SD Memory Card

Also, see **SD Memory Card** **P8**.

SD memory cards (sold separately) can be used with the HDC-401EX (32, 64, 128, 256 and 512 MB compatible).

Images can be captured without an SD memory card, as the camera has an internal 16 MB flash memory.

Copying Images in the Internal Memory to the SD Memory Card **P65** is also possible.

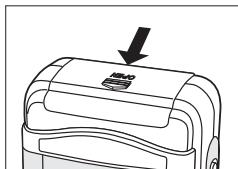
• For a reference on the possible number of shots and recording time, see

■ **Specifications: Number of Recordable Images/Recording Time and Data Size** **P97**.

• The SD memory card is hereinafter referred to as the “memory card.”

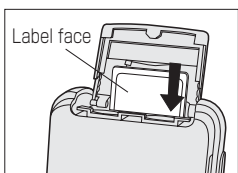
- If a memory card is used the memory card will be given priority, thus preventing the camera from recording to its internal memory or erasing images from the internal memory.
- Turn off the power before replacing the memory card.

1



Open the battery/SD memory card cover by sliding it in the direction of the arrow.

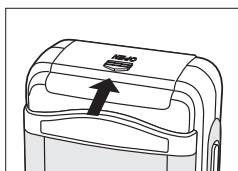
2



Insert a memory card.

Insert the card securely in the direction shown until you hear it “click” into place.

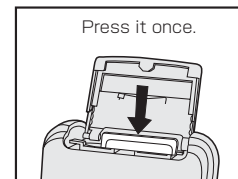
3



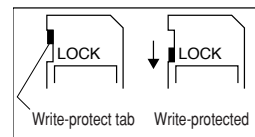
Close the battery/SD memory card cover.

Removing the Memory Card

Open the battery/SD memory card cover and press the memory card once to remove the card.



Write-Protecting the Memory Card




Each memory card has a write-protect switch. If the write-protect switch is locked, the message **Card Locked!** is displayed on the LCD monitor. In this condition normal data capture or deletion cannot be performed.

- If you want to use a memory card that has been formatted in another digital camera or computer, format the card in the HDC-401EX before use. See **Formatting** **P74**.
- If you are using a memory card, also read the user manual for the memory card.

■ Setting to the Default


If you have changed various items and want to restore their default settings, follow the steps given below:

1




MENU

In the Still Image/Video Capture mode, press **MENU** to display the **Capture Menu** screen.




2




OK
Q

In the Capture Menu screen, select Set to Default using **[▲]****[▼]** and then press **OK/Q**.


A message appears, prompting you to confirm the reversion.






OK
Q


3



OK
Q






Select **Yes/No** using **[▲]****[▼]** and then press **OK/Q**.





OK
Q

Default Settings

Setting item	Default setting
Image size	 2304×1728
Image quality	★ Normal
Scene	Auto
Exposure(EV)	Auto
White balance	Auto
Quick view	On
ISO	Auto
Color	 Full color
Saturation	 Medium
Sharpness	 Medium
Date Imprint	Off
Beeper	On
Power Off Time	3 min
Flash	 Suppressed Flash mode
Display mode (Playback mode)	Default

Setting to the Default won't affect items other than those specified above, such as display language, video mode and date/time display mode. With these items the current setting is given priority.

Capturing Still Images/Videos

■ Capturing Still Images

You can capture still images by viewing the LCD monitor or looking into the viewfinder. If the battery power is low or when you want to use the HDC-401 EX like a regular film camera, use of the viewfinder is recommended. Use the camera in a manner appropriate to the given purpose or your own preference, by referring to **Using the LCD Monitor or Viewfinder**.

Using the LCD Monitor or Viewfinder

	Capture images by viewing the LCD monitor	Capture images by looking into the viewfinder (LCD monitor is off)
When?	<ul style="list-style-type: none">• You want to check the actual range of a captured image• You want to take close-up shots of flowers, people or other subjects	<ul style="list-style-type: none">• The battery power is low• You want to use the camera like a regular film camera
Advantages	<ul style="list-style-type: none">• The range of a captured image can be checked accurately.	<ul style="list-style-type: none">• The camera doesn't shake easily.• The subjects can be seen clearly even when there is too much lighting.• Battery consumption is lower.
Drawbacks	<ul style="list-style-type: none">• The camera shakes easily.• The subjects cannot be seen clearly when there is too much or too little lighting.• The batteries are consumed more quickly than when the viewfinder is used.	<ul style="list-style-type: none">• When a nearby subject is shot, the image you see in the viewfinder is not exactly the same as the image that was actually captured.

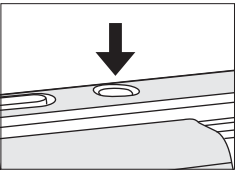
Quick View

If **Quick View** is set to **ON** (the default setting is **ON**), the captured image is automatically displayed after you press the shutter. To change the setting, select **Quick View** from the **Capture Menu** screen and then select **ON/OFF**.

The quick view setting is retained even after the power is turned off. However, **Setting to the Default P25** returns the setting to **ON**.

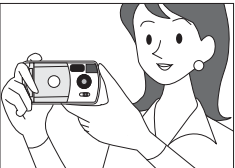
Capturing Images by Viewing the LCD Monitor

1



Open the lens cover and press the power switch to turn on the power.
The camera will enter the Still Image Capture mode.

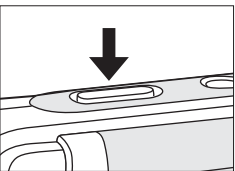
2



Keep your elbows against your sides and hold the camera with both hands. Set the layout so that you can see the subject(s) inside the LCD monitor.

Hold the camera with both hands and keep your elbows against your sides to hold the camera firmly in position.

3



Press the shutter.

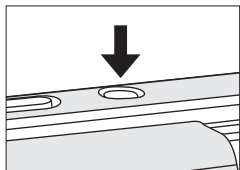
- When the image has been captured, you will hear a "bleep" sound.
- If **Quick View** is set to **ON** (the default setting is **ON**), the captured image is displayed automatically. Once the current image is displayed, you can capture the next image.

If the viewfinder lamp (red) is blinking after an image is captured, it means the flash is charging. See **Using the Flash P30**.

Capturing Images by Looking into the Viewfinder (LCD Monitor off)

If the subjects are located at very close to the camera (approximately 110 cm or less), the image you see in the viewfinder won't be exactly the same as the image that is captured. In this case it is recommended that you capture images by viewing the LCD monitor by **Setting the Camera to the Close-up Mode P31**.

1



Open the lens cover and press the power switch to turn on the power.

The camera will enter the Still Image Capture mode.

2

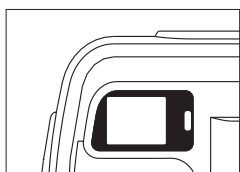


Press three times.

Press three times to set the view finder to the Display Off mode.

Switching the LCD Monitor Display Mode P15

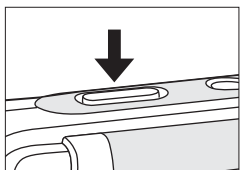
3



Keep your elbows against your sides and hold the camera with both hands. Set the layout so that you can see the subject(s) inside the view finder.

Hold the camera with both hands and keep your elbows against your sides to hold the camera firmly in position.

4



Press the shutter.

- When the image has been captured, you will hear a "bleep" sound.
- If Quick View is set to ON (the default setting is ON **P27**), the captured image is displayed automatically. Once the current image is displayed, you can capture the next image.

If the viewfinder lamp (red) is blinking after an image is captured, it means the flash is charging.

Using the Flash

Select a desired flash setting according to the condition and purpose of image capture. The flash sequence consists of two flashes: the preliminary flash and the main flash. The amount of light required by the main flash is calculated based on the exposure information of the subjects as obtained with the preliminary flash. This ensures that the image is captured under appropriate lighting.

1



In the Still Image Capture mode, press the flash button () repeatedly to select the desired flash mode.

- When the flash is enabled, the viewfinder lamp (red) blinks to inform you that the flash is charging.

Suppressed Flash mode: The flash will not operate **Default setting**.

In a dark place the shutter speed drops and camera shake occurs more easily. To capture images in a dark place, use a tripod, etc., to keep the camera as still as possible.

Auto mode: The camera automatically flashes in accordance with the environment in which the image is captured.

Red-Eye Reduction (auto) mode: Use this mode if you want to make the eyes of the subjects look natural in a darker environment with flash usage. The camera flashes once before the main flash is emitted upon image capture.

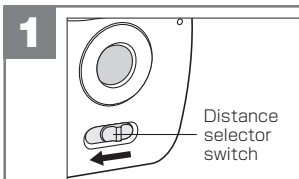
Forced Flash mode: The camera always flashes.


- The flash-interlocked range (recommended) is approximately 0.6 to 2.1 m, but the flash won't operate in Close-Up mode. In Close-Up mode, the effective interlocked range (recommended) becomes approximately 1.1 to 2.1 m. The flash effect may not be appropriate on subjects positioned outside this range.
- The flash mode selected here returns to the Suppressed Flash mode once the camera is turned off or Setting to the Default **P25** is executed.

- The camera won't flash if Close-Up mode **P31** is selected.
- When a given scene mode is selected, the camera is locked to the flash mode that is most appropriate to the selected scene mode. A different flash mode cannot be selected. Please refer to **Setting the Scene Mode P55**.
- It may take approximately 10 seconds to charge the flash. The charge time will vary, depending on the use condition of the camera and the remaining battery power.
- You cannot capture an image by pressing the shutter button while the flash is charging.
- If the battery power is low, the flash may not operate even in a dark place. If the camera doesn't flash in a dark place, it is recommended that the batteries be replaced.
- The Red-Eye Reduction mode is different from the Forced Flash mode.
- The red-eye reduction effect varies with a given subject. The effect may decrease, depending on the distance to the subject or conditions of image capture.

■ Shooting Close-Up Shots (Self-Portraits)

The Close-Up mode lets you take images of nearby subjects positioned approximately 55 to 110 cm away from the camera. This mode is ideal for self-portraiture using the lens cover (mirror).




In the Still Image Capture mode, set the distance selector switch  to Close-Up mode.

 is displayed on the LCD monitor to inform you that the camera is now in Close-Up mode.

 **Close-Up mode** : The image capture range is approximately 55 to 110 cm.

 **Standard mode** : The image capture range is approximately 110 cm or more.

- It can sometimes be difficult to bring the subjects into focus if they're located outside the range of either Close-Up or Standard mode. It is recommended that you keep an appropriate distance from the subjects.
- If the Close-Up mode is set, the camera is locked to the Suppressed Flash  mode even if another flash mode has been selected.
- **Capturing Images by Looking into the Viewfinder P29** in Close-Up mode will create a discrepancy between the image you see in the viewfinder and the image that is actually captured. In the Close-Up mode, **Capturing Images by Viewing the LCD Monitor P28** is recommended.
- In the Close-Up mode you cannot set the scene **P55**, Exposure(EV) **P57** or ISO (capture sensitivity) **P62**.
- The Close-Up mode is also effective in Video Capture mode.

■ Using the Zoom

You can enlarge your subject up to 200% using the zoom function (digital zoom).

- The digital zoom is effective only in the LCD monitor mode (image size: 2304 x 1728).
- The digital zoom cannot be used when another image size is selected, the LCD monitor is set to the Display Off mode or the camera is in Video Capture mode.
- When the digital zoom is used images are captured in 1152 x 864 size (approximately 1 million pixels).
- Since the camera zooms in on the center of the image, the function for **Setting the Date Imprint P63** cannot be used.

1



In the Still Image Capture mode, press the digital zoom  button.

The digital zoom guide is displayed on the LCD monitor.

- Pressing  again returns the zoom size to 100%.



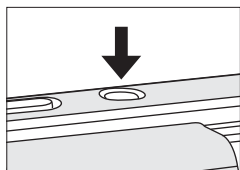
Range captured with the digital zoom

The digital zoom setting selected here is canceled (standard) once **MENU** or **MODE** is pressed or the power is turned off.

■ Capturing Videos

You can capture videos using the HDC-401EX. Captured videos can be played directly on the camera or viewed on a TV by connecting the camera using the supplied video cable.

1



Open the lens cover and press the power switch to turn on the power.

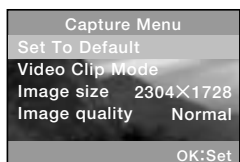
The camera will enter the Still Image Capture mode.

2



In the Still Image Capture mode, press **MENU**.

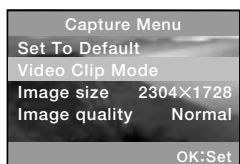
The Capture Menu screen is displayed.



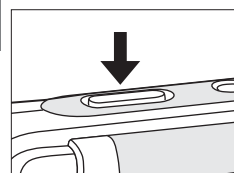
3



In the **Capture Menu** screen, select **Video Capture Mode** using **▲** **▼** and then press **OK**.



4

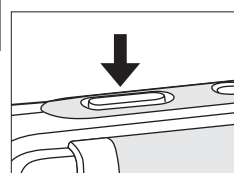


Press the shutter.

- When you hear a "bleep" sound and see **REC** on the LCD monitor, this indicates that the camera has begun video capture. The LCD monitor shows **REC** and the elapsed time during video capture.



5



To stop video capture, press the shutter.

The camera stops the capture after emitting a "bleep" sound.

- The capture stops automatically when the available memory drops to below the required level.
- The white balance **P58**, Exposure(EV) **P57**, color **P61** and Close-Up mode **P31** are effective during video capture, but other settings are disabled.

Video Files

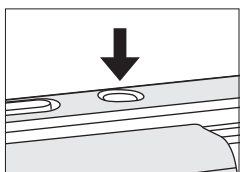
Image size (Recording resolution)	320×240
Recording image file format	MPEG1 (No sound)
Frame rate	24 frames/sec.
Data size	Approximately 231 KB/sec.
Recording time	Internal 16 MB flash memory: Approximately 61 seconds 32 MB SD memory card: Approximately 128 seconds

- The above data size and recording time are reference values assuming the (Full Color) mode **P61**. The actual size and time will vary, depending on the subject and capture conditions.
- To play the recorded video files on a computer, you will need Windows Media Player or other playback software supporting the recording image file format (MPEG1) of the HDC-401EX.

Viewing Still Images/Videos

Captured still images and videos can be played on the LCD monitor. They can be played in the single, zoom (200, 300 or 400%) or index (9-division) mode.

1



Press the power switch to turn on the power.

The camera enters the Still Image Capture mode.

2



Press **MODE** once to activate the Playback mode.



The last captured image is displayed (single playback).

3



Select the desired image using **[◀] [▶]**.

• Only the first frame is displayed for videos.



Zoom Playback

Images displayed in Single Playback mode can be enlarged to 200, 300 or 400%.

Zoom Playback mode does not work with video images.

1



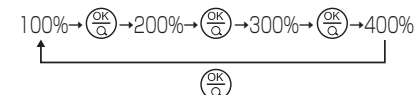
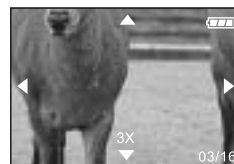
Select the image you want to enlarge using **[◀] [▶]**.



2



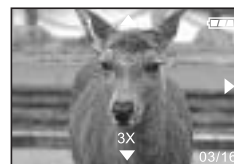
Pressing **OK/ENTER** starts the playback, with the monitor zooming in on the center of the image.



3



Press **[▲] [▼] [◀] [▶]** on an enlarged view to change the displayed portion of the image.



Pressing **MENU** or **MODE** or turning off the power during zoom playback cancels the Zoom Playback mode.

Index Playback


Multiple images can be displayed by dividing the LCD monitor into nine areas. This mode is useful if there are many images to choose from.

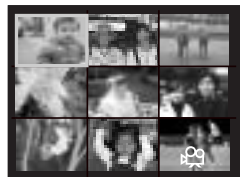
1



In the Single Playback mode, press the index  button ([▲]).

The Index Playback screen is displayed.

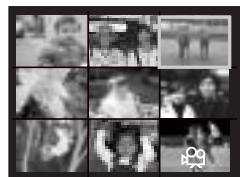
- Videos are shown with .



2



Select the desired image using [▲][▼][◀][▶].



3



Pressing  displays a single playback screen of the selected image.



Video Playback

1




Use [◀][▶] to select the video you want to play.

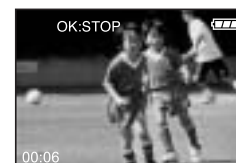
- Videos are shown with .



2





Pressing  starts playback. The LCD monitor shows the elapsed time.

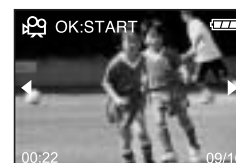


3



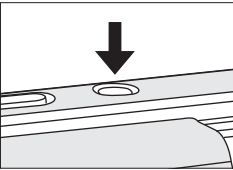
Pressing  while the video is played stops playback.

Pressing  again starts playback, beginning with the first frame.




Deleting Images

Once deleted, the recorded data cannot be restored. Before deleting image files, confirm that they aren't really needed. Particularly when deleting all images, check the content of each image beforehand.



- 

Press the power switch to turn on the power.


The camera enters the Still Image Capture mode.
- 


Press **MODE** once to activate the Playback mode.


The last captured image is displayed (single playback).


- 

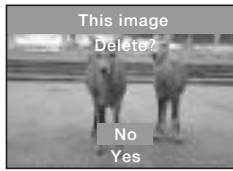

Use **[◀] [▶]** to select the image you want to delete.


 - Only the first frame is displayed for videos.


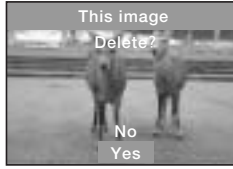

- 

Press the delete  button (**[▼]**).

A message appears, prompting you to confirm the deletion.


- 

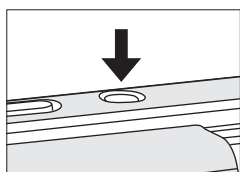
Select **Yes/No** using **[▲] [▼]** and then press .

 - Selecting **No** cancels the deletion, and the camera returns to Playback mode. To delete another image, press  again and select **Yes** when the confirmation message is displayed.


To delete all images, follow the procedure explained in **Deleting All Images P41**.

Deleting All Images

1



Press the power switch to turn on the power.

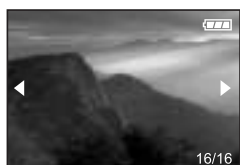
The camera enters the Still Image Capture mode.

2



Press **MODE** once to activate the Playback mode.

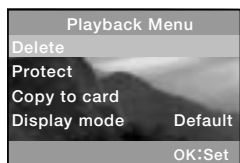
The last captured image is displayed (single playback).



3



In the Playback mode, press **MENU** to display the **Playback Menu** screen.

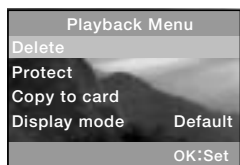


4



In the **Playback Menu** screen, select **Delete** using **[▲]** **[▼]** and then press **OK/Q**.

The Delete menu is displayed.



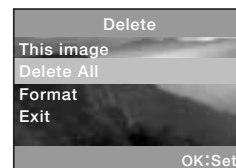
5



Select **Delete All** using **[▲]** **[▼]** and then press **OK/Q**.

A message appears, prompting you to confirm the deletion.

•The images are not yet deleted.



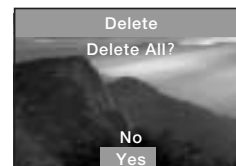
6



Select **Yes/No** using **[▲]** **[▼]** and then press **OK/Q**.

•Selecting **Yes** deletes all images. The camera returns to the Playback mode and **No Image** is displayed.

•Selecting **No** switches the display back to the Delete menu.

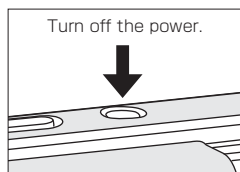


Playing/Capturing Images Using a TV

You can use the supplied video cable to capture or play images by displaying them on a TV.

When connecting or disconnecting the video cable, be sure to turn off the camera and TV power first.

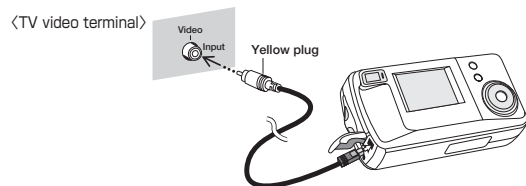
1



Check to see if the camera power is turned off. If the camera is still on, press the power switch to turn off the power.

2

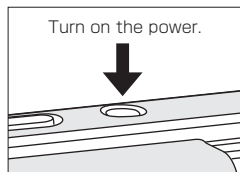
Insert the mini-plug (smaller plug) of the video cable into the USB terminal on the camera, and then connect the pin plug (larger, yellow plug) to the video terminal on the TV.



3

Turn on the TV power and switch the TV's input mode to VIDEO IN.

4



Open the lens cover and turn on the camera.

The images are displayed on the TV.

5



To play the images, press **MODE** to activate Playback mode.

- Keep the connected video cable slack. If the cable remains taut, the terminals may be subject to excessive force and sustain damage.
- The LCD monitor is turned off while the camera is connected to a TV.

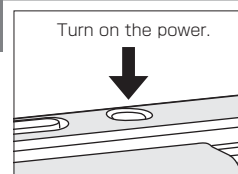
Before Connecting to a TV

- The factory-set TV (video) mode is PAL. To change this setting, follow the operation below.

Key countries using NTSC: Japan, U.S.A., South Korea, Canada, etc.

Key countries using PAL: U.K., Italy, Switzerland, Spain, Australia, the Netherlands, Thailand, Malaysia, Singapore, etc.

1



Press the power switch to turn on the power.

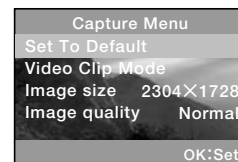
The camera enters the Still Image Capture mode.

2



Press **MENU**.

The Capture Menu screen is displayed.



3



In the **Capture Menu** screen, select **Setup** using **[M]** **[N]** and then press **OK**.

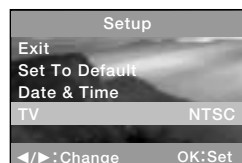
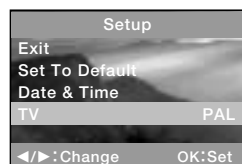
The Setup menu is displayed.



4



In the **Setup** menu, select **TV** using **[▲][▼]** and then select TV mode using **[◀][▶]**.

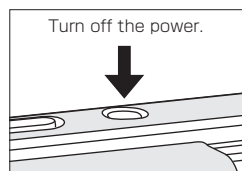


5



Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.

6



Once TV mode is set, press the power switch to turn off the camera.
Go to **P43** **2**.

The TV mode selected here is retained even after **Setting to the Default** **P25** is executed or the power is turned off.

Advance Operations

This chapter describes more detailed settings of the HDC-401EX. You can choose to read the sections corresponding to the functions you want to use.

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- Setting the Image Size (Recording Resolution) and Image Quality (Compression Ratio) — 52
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- Copying Images in the Internal Memory to the SD Memory Card (Copy to SD Card) — 65
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Getting Ready

■ Setting the Language

The display language of the LCD monitor can be selected from the options listed below.

- The language of your HDC-401EX is factory-set to **English**. To change the default language, follow the steps given below.

Japanese (日本語)	Italian (Italiano)
English (English)	French (Français)
Chinese1 (简体中文)	German (Deutsch)
Chinese2 (繁體中文)	Spanish (Español)

The language selected here is retained even after **Setting to the Default P25** is executed or the power is turned off.

1 Press **MENU** to display the **Capture Menu** screen.



2 In the **Capture Menu** screen, select **Setup** using **[▲][▼]** and then press **OK**.



The **Setup** menu is displayed.



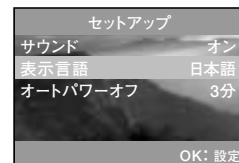
3 In the **Setup** menu, select **Language** using **[▲][▼]** and then press **OK**.



4 Select the desired language using **[▲][▼]**, and then press **OK**.



The camera saves the selection and returns to the **Setup** menu.


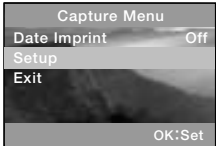

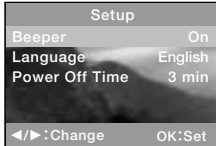
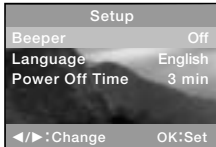



5 Pressing **MENU** exits the **Capture Menu** screen.



■ Turning Sound On/Off





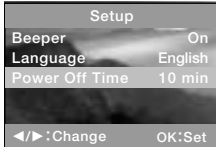

The sound from the camera can be turned ON **Default setting** or OFF.

- 1  Press **MENU** to display the **Capture Menu** screen.
- 2  In the **Capture Menu** screen, select **Setup** using **[▲]****[▼]** and then press  .
The Setup menu is displayed.
- 3  In the **Setup** menu, select **Sound** using **[▲]****[▼]** and then select **ON/OFF** using **[◀]****[▶]**.
 Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.
- 4 

- The sound **ON/OFF** setting selected here is retained even after the power is turned off. However, **Setting to the Default P25** returns the setting to **ON**.

■ Setting the Power Off Time

The Power Off Time function can be set to 1 minute, 3 minutes **Default setting**, 5 minutes, 10 minutes or Off.

- 1  Press **MENU** to display the **Capture Menu** screen.
- 2  In the **Capture Menu** screen, select **Setup** using **[▲]****[▼]** and then press  .
The Setup menu is displayed.
- 3  In the **Setup** menu, select **Power Off Time** using **[▲]****[▼]** and then select from **1 min.**, **3 min.**, **5 min.**, **10 min.** or **Off** using **[◀]****[▶]**.
 Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.
- 4 

- The power-off time selected here is retained even after the power is turned off. However, **Setting to the Default P25** returns the setting to **3 min**.
- The Power Off Time function is disabled while the camera is connected to a computer via the USB cable.

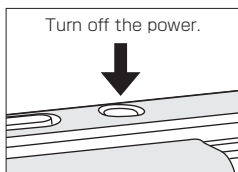
■ Using the AC Adapter (sold separately)

An AC adapter can be connected to the HDC-401EX.

When playing images or videos on a TV or manipulating them on a computer or otherwise keeping the camera on for a long period of time, use of the AC adapter reduces battery consumption.

Before connecting the AC adapter, be sure to turn off the camera's power.

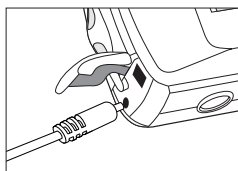
1



Check to see if the camera power is turned off.

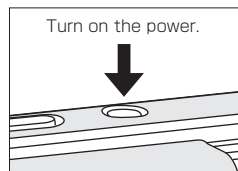
If the camera is still on, press the power switch to turn off the power.

2



Insert the AC adapter's mini-plug into the DC input terminal on the camera.

3



Press the power switch to turn on the power.

- is displayed on the LCD monitor.
- You can now use the camera in the same way you do with battery power.

- You must purchase the AC adapter separately.
- You CANNOT charge AA nickel metal hydride batteries, etc., using the AC adapter.
- While the AC adapter is connected, power is not supplied from the dry batteries.
- The Power Off Time setting remains effective even while the AC adapter is connected. The default setting is 3 minutes.
- Keep the connected AC adapter cable slack. **P50** If the cable remains taut, the terminals may be subject to excessive force and sustain damage.

Capture (Still Image/Video)

■ Setting the Image Size (Recording Resolution) and Image Quality (Compression Ratio)

You can set a desired image size (recording resolution) and image quality (compression ratio) according to a given purpose.

Image size (Recording resolution)

- 4M** 2304 × 1728 (Approx. 4 million pixels) **Default setting**
- 2M** 1600 × 1200 (1.92 million pixels)
- 1.2M** 1280 × 960 (Approx. 1.23 million pixels)
- 0.3M** 640 × 480 (Approx. 310,000 pixels)

Image quality (Compression ratio)

- ★ Fine (Low compression (1/8) mode)
- ★ Normal (Standard compression (1/12) mode) **Default setting**
- ★ Economy (High compression (1/16) mode)

The image size and quality selected here are retained even after the power is turned off. However, **Setting to the Default P25** returns **Image Size** to **4M** (2304 x 1728) and **Image Quality** to ★ (Normal).

Image Size (Recording Resolution) and Image Quality (Compression Ratio)

When the image size is increased and image quality set to Fine mode, the data size increases and the number of images that can be recorded in memory, etc., decreases.


Use the appropriate settings according to how you want to use the captured images. For example, select 2304 x 1728/1600 x 1200 if you want to print the images, or 1280 x 960/640 x 480 if you want to send them over the Internet as e-mail attachments.

In Video Capture mode, 320 x 240 is selected as the image size (recording resolution).

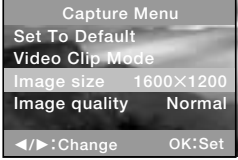

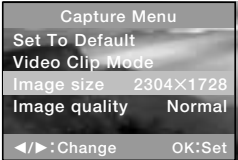

For the number of recordable images and data size under each image size/quality setting, see **■ Specifications: Number of Recordable Images/Recording Time and Data Size P97**.

Setting the Image Size


- 1



Press **MENU** to display the **Capture Menu** screen.
- 2




In the **Capture Menu** screen, select **Image Size** using **[▲]****[▼]** and then select the desired image size using **[◀]****[▶]**.
- 3





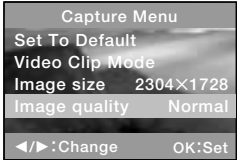

Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.

Setting the Image Quality


- 1



Press **MENU** to display the **Capture Menu** screen.
- 2





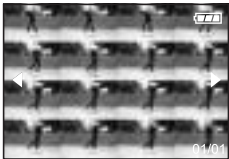








In the **Capture Menu** screen, select **Image Quality** using **[▲]****[▼]** and then select the desired image-quality level using **[◀]****[▶]**.
- 3



Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.

■ Setting the Scene Mode

Set the scene mode most appropriate to a given scene. The camera will capture images and videos in the optimal mode for the selected scene.

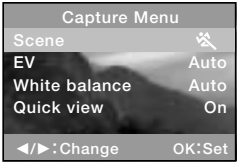
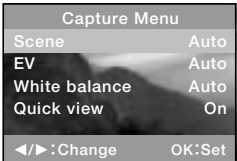
Scene mode type	Description
Auto	Use this mode for normal image/video capture Default setting .
 Sports	The camera will capture 16 images in a period of approximately 1.6 to 2 seconds. •The flash mode is set to  (Suppressed Flash). <div>The captured data is recorded as a JPEG file.</div> 
 Night Scene	This mode prevents only the background from becoming dark when shooting a subject against a night scene, etc. •The flash mode is set to  (Red-Eye Reduction, Auto). <div>It is recommend that you use a tripod, etc., to keep the camera as still as possible.</div>
 Portrait	The camera automatically sets the mode most suitable for portraits. •The flash mode is set to  (Red-Eye Reduction, Auto).
 Landscape	The camera automatically sets the mode most suitable for landscape pictures. •The flash mode is set to  (Suppressed Flash).
 Back Light	This mode prevents the subject from becoming dark when shooting back light or a bright background. •The flash mode is set to  (Forced flash).

1




Press **MENU** to display the **Capture Menu** screen.

2



In the **Capture Menu** screen, select **Scene** using **[▲]****[▼]** and then select the desired scene mode using **[◀]****[▶]**.

3



Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.

The Scene mode setting selected here returns to **Auto** when the power is turned off or **Setting to the Default P25** is executed.

■ Setting the Exposure (Brightness)

The HDC-401EX uses programmed AE as its exposure control system. However, you can correct the exposure manually (-2.0 EV to +2.0 EV (set in 0.5-EV steps)) if the subjects are dark, such as when shooting them back light or a bright background.

1

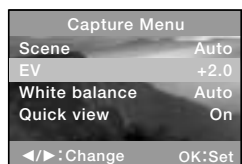
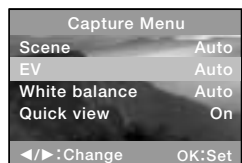


Press **MENU** to display the **Capture Menu** screen.

2



In the **Capture Menu** screen, select **EV** using **[▲]** **[▼]** and then select the desired EV level using **[◀]** **[▶]**.



3



Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.

The EV setting selected here is retained even after the power is turned off. However, **Setting to the Default P25** will return the setting to **Auto**.

■ Setting the White Balance

You can set the white balance according to the light source.

Auto : The camera automatically sets the white balance **Default setting**.

☀ : Used for image/video capture under daylight

☁ : Used for image/video capture in cloudy weather

🌅 : Used for image/video capture at sunset

💡 : Used for image/video capture under tungsten lighting

⚡ : Used for image/video capture under fluorescent lighting

1

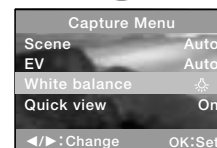
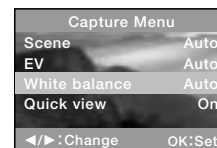


Press **MENU** to display the **Capture Menu** screen.

2



In the **Capture Menu** screen, select **White Balance** using **[▲]** **[▼]** and then select the desired white balance level using **[◀]** **[▶]**.



3



Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.


The white balance setting selected here is retained even after the power is turned off. However, **Setting to the Default P25** will return the setting to **Auto**.

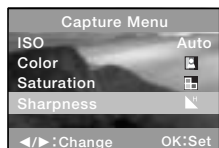
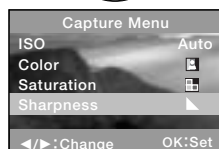
■ Setting the Sharpness


You can set the sharpness of captured images.

- High
- Medium **Default setting**
- Low

1  Press **MENU** to display the **Capture Menu** screen.

2  In the **Capture Menu** screen, select **Sharpness** using **[▲]****[▼]** and then select the desired sharpness level using **[◀]****[▶]**.



3  Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.


The sharpness setting selected here is retained even after the power is turned off. However, **Setting to the Default P25** returns the setting to (Medium).

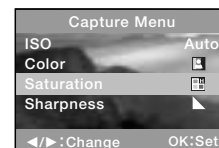
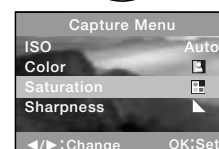
■ Setting the Saturation


You can set the saturation of captured images.

- High
- Medium **Default setting**
- Low

1  Press **MENU** to display the **Capture Menu** screen.

2  In the **Capture Menu** screen, select **Saturation** using **[▲]****[▼]** and then select the desired saturation level using **[◀]****[▶]**.



3  Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.

The saturation setting selected here is retained even after the power is turned off. However, **Setting to the Default P25** will return the setting to (Medium).

■ Setting the Color Mode

You can set the color mode of captured images.

Full Color **Default setting**

Black & White

Sepia

1

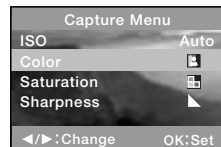
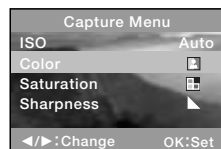


Press **MENU** to display the **Capture Menu** screen.

2



In the **Capture Menu** screen, select **Color** using **[▲]****[▼]** and then select the desired color mode using **[◀]****[▶]**.



3



Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.

The color mode selected here is retained even after the power is turned off. However, **Setting to the Default P25** returns the setting to (Full Color).

■ Setting the ISO (Capture Sensitivity)

You can set the ISO.

The ISO is a unit of photographic film sensitivity and indicates the ability to react to light. The larger the ISO number the higher the sensitivity becomes, thus enabling image/video capture under limited light (in a dark place).

Auto: The camera automatically sets the ISO **Default setting**.

ISO 100 : Equivalent to ISO 100

ISO 200 : Equivalent to ISO 200

1

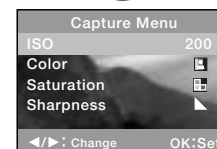
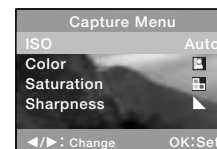


Press **MENU** to display the **Capture Menu** screen.

2



In the **Capture Menu** screen, select **ISO** using **[▲]****[▼]** and then select the desired ISO level using **[◀]****[▶]**.



3



Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.

The ISO setting selected here is retained even after the power is turned off. However, **Setting to the Default P25** returns the setting to **Auto**.

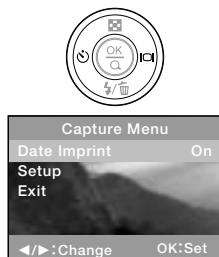
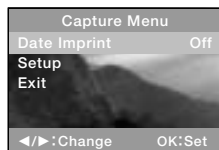
■ Setting the Date Imprint

You can imprint the captured images with the date on which they were taken.

When a still image is captured with the Date Imprint function set to **ON**, the date is imprinted on the JPEG file of the captured image (in the lower-left corner). Note that this is different from printing the date information of a file based on a printer setting, etc.

1 Press **MENU** to display the **Capture Menu** screen.

2 In the **Capture Menu** screen, select **Date Imprint** using **[▲]****[▼]** and then select the **ON/OFF** mode using **[◀]****[▶]**.




3 Pressing **MENU** saves the selected setting, and the camera exits the **Capture Menu** screen.



- The date-imprint setting selected here is retained even after the power is turned off. However, **Setting to the Default P25** returns the setting to **OFF**.
- The date is imprinted in white text, which may be difficult to see against a white background.
- Even if the Date Imprint function is set to **ON**, the date won't be imprinted in the digital zoom mode.

■ Using the Self-Timer

You can capture images using the camera's self-timer function (which can be set to 10 seconds or 5 seconds).

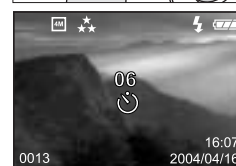
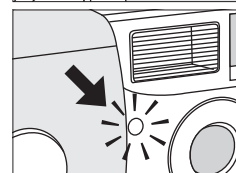
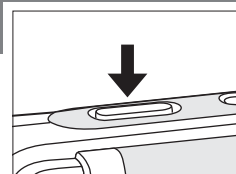
When the self-timer is used, keep the camera from moving by setting it on a tripod, etc.

1 In the Still Image Capture mode, press the self-timer  button (**[◀]**) repeatedly to select the desired timer period.


-  : The timer period is set to 10 seconds.
 : The timer period is set to 5 seconds.

An icon corresponding to the selected timer period is displayed on the LCD monitor.

2 Set the layout and press the shutter.



- The self-timer lamp (red) starts blinking and the number shown on the LCD monitor begins decreasing, indicating that the self-timer has started. When the selected timer period elapses, the camera will emit a "bleep" sound to indicate that the image has been captured.

- To stop the self-timer, press the self-timer  button (**[◀]**).
- The image capture settings (image size, image quality, white balance, EV, etc.) are also effective when the self-timer is used.
- The self-timer function is canceled once the image is captured. To take another image using the self-timer, set the self-timer again.

Playback (Still Image/Video)

■ Copying Images in the Internal Memory to the SD Memory Card (Copy to SD Card)

You can copy images stored in the camera's internal memory (16 MB) to the memory card. This function is useful when you have recorded images to the internal memory because the memory card was full, and now want to copy the images to a memory card having ample space.

- This function is effective only when images are stored in the internal memory.
- Repeating this operation copies the same images to the memory card multiple times.

1



Press **MODE** to activate the Playback mode.

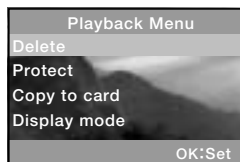
The last captured image is displayed (single playback).



2



In the Playback mode, press **MENU** to display the **Playback Menu** screen.

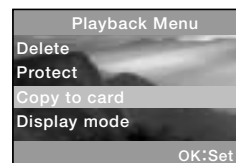


3



In the **Playback Menu** screen, select **Copy to Card** using **[▲]****[▼]** and then press **OK**.

A message appears, prompting you to confirm the copy.

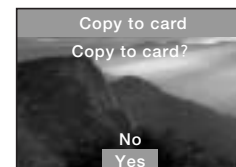


4



Select **Yes/No** using **[▲]****[▼]** and then press **OK**.

- Selecting **Yes** copies all images in the internal memory to the memory card, whereupon the camera exits the **Playback Menu** screen.
- Selecting **No** cancels the copy, and the camera will exit the **Playback Menu** screen. To perform another copy, repeat the operation from the **Playback Menu** screen.



- In the event there is insufficient space on the memory card, only the images that can fit are copied. The screen then displays the message **Card Full!** and copying is aborted.

■ Playing a Slide Show

You can play all the images stored in memory as a slide show at intervals of 1, 3, 6 or 10 seconds.

1



Press **MODE** to activate the Playback mode.

The last captured image is displayed (single playback).



2



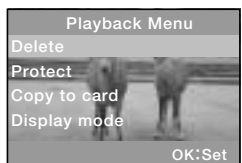
Use [◀] [▶] to select the images you want to view in a slide show.



3



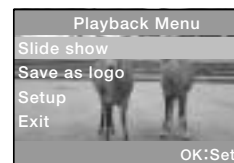
Press **MENU** to display the **Playback Menu** screen.



4



In the **Playback Menu** screen, select **Slide Show** using [▲] [▼] and then press .

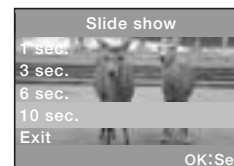


5



Select the desired playback interval (**1, 3, 6 or 10 sec.**) using [▲] [▼] and then press .

A slide show starts, based on the selected playback interval.



- Pressing during playback ends the slide show.
- Only the first frame is displayed for videos.
- During a slide show, the camera selects the Image Only display mode regardless of the current setting.

■ Protecting Images

You can protect image files against inadvertent deletion due to improper operation.

1



Press **MODE** to activate the Playback mode.

The last captured image is displayed (single playback).



2



Use [**◀**] [**▶**] to select the images you want to protect.

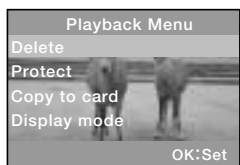
- If many images are stored in the internal memory or memory card, using the Index Playback screen will make selection easy.



3



Press **MENU** to display the Playback Menu screen.

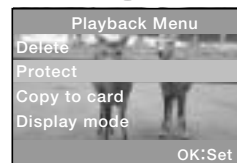


4



In the **Playback Menu** screen, select **Protect** using [**▲**] [**▼**] and then press .

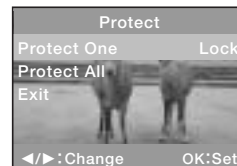
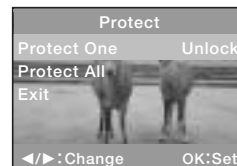
The Protect menu is displayed.



5



Select **Protect One** using [**▲**] [**▼**] and then select **Lock/Unlock** using [**◀**] [**▶**].



6




Pressing **MENU** saves the selection, and the camera exits the **Playback Menu** screen.

- When Lock is selected, (protect mark) is shown during a single playback of the selected image.




Protecting All Images


1




In the **Protect** menu, select **Protect All** using **[▲]****[▼]** and then press **OK**.



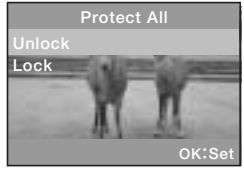
OK/Set




2



Select **Lock/Unlock** using **[▲]****[▼]** and then press **OK**.



OK/Set




Once the image protection is set, the images won't be deleted. However, they are deleted if **Formatting P74** is performed.

Setting the Startup Screen (My Camera)

You can set your favorite image on the startup screen.


The image selected for the startup screen is saved in a format different than the one in which captured images are normally saved in the camera. **Deleting Images P39** or **Formatting P74** won't erase the startup screen image. However, after these operations the image will no longer exist as a normal captured image and cannot be restored as a normal image.

1




Press **MODE** to activate the Playback mode.

The last captured image is displayed (single playback).




2




Use **[◀]****[▶]** to select the image you want to use as the startup screen.

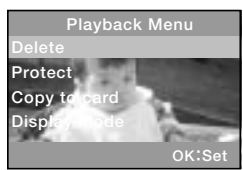
- If many images are stored in the internal memory or memory card, using the Index Playback screen will make selection easy.



3



Press **MENU** to display the **Playback Menu** screen.



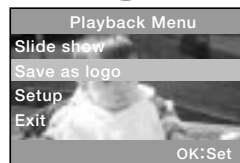
OK/Set

4



In the **Playback Menu** screen, select **Save as logo** using **[▲][▼]** and then press **OK**.

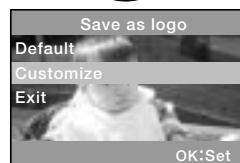
The Save as logo menu is displayed.



5



Select **Customize** using **[▲][▼]** and then press **OK**.



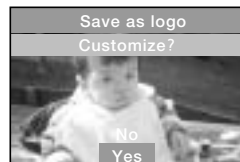
6



Select **Yes** using **[▲][▼]** and then press **OK**.

The camera returns to Playback mode.

- When the power is turned off and then turned on again, the set image is displayed on the startup screen.
- To restore the default startup screen (the image shown on the camera when it was turned on for the first time), select **Default** by following the procedure in step **5**, and then press **Yes** in step **6**.



- Only one image can be set as the startup screen in **Customize**. If another image is set as the startup screen, the first image is overwritten.
- The startup screen setting selected here is retained even after the power is turned off or **Setting to the Default P25** is executed.

Deleting

■ Formatting

Formatting refers to making space available in the camera's internal memory or memory card when it becomes full, so that images and data can be stored again.

- Formatting the internal memory or memory card will delete all data stored inside. Confirm the content of the stored data before formatting.
※The formatting process also deletes the protected images.
- If you want to use a memory card that has been used in other digital camera or in a computer, format the card in the HDC-401EX before use.
- Check the remaining battery power before formatting. If the power is turned off during the formatting process, the internal memory/memory card may not be formatted correctly. An improperly formatted memory card may not function correctly.

1



Press **MODE** to activate the Playback mode.

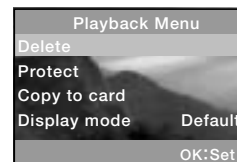
The last captured image is displayed (single playback).



2



Press **MENU** to display the **Playback Menu** screen.

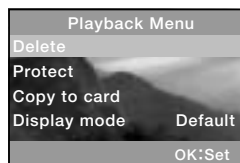


3



In the **Playback Menu** screen, select **Delete** using **[▲]****[▼]** and then press .

The Delete menu is displayed.



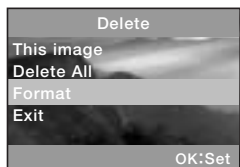
4



Select **Format** using **[▲]****[▼]** and then press .

A message appears, prompting you to confirm formatting.

- The data is not yet deleted.

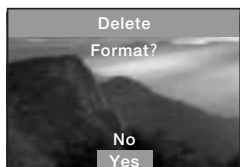


5



Select **Yes/No** using **[▲]****[▼]** and then press .

- Selecting **Yes** starts formatting, and the camera returns to Playback mode.
- When **No** is selected, the screen returns to the Delete menu.



Operations While Connected to a Computer

This chapter describes how to connect the HDC-401EX to a computer and load the image files.

Flow of Copying Image Files to a Computer — 77

- 1 Check the operating environment of the computer — 78
- 2 Installing the HDC-401EX Driver in the Computer (Windows98/98SE) — 79
- 3 Connecting the HDC-401EX to the Computer Using the USB Cable — 81
- 4 Copying Image Files to the Computer (Reader/Writer Connection) — 83
- 5 Removing the Camera — 85

Uninstalling (Deleting) the HDC-401EX Driver — 87

■ Flow of Copying Image Files to a Computer

1 Check the operating environment of the computer.

Windows Me/2000/XP

Windows 98/98SE

2 Install the HDC-401EX Driver in the computer P79 .

3 Connect the HDC-401EX to the computer using the USB cable P81 .

※When your HDC-401EX is connected to the computer for the first time, the New Software wizard is displayed. It will quickly navigate you through the necessary steps so that the computer can automatically recognize the HDC-401EX.

4 Open My Computer and click the removable disk (= camera). Copy the desired image files to the computer P83 .

5 Disconnect the camera P85 .

1 Check the operating environment of the computer

The computer must satisfy the following conditions before you can connect your HDC-401EX to the computer using the USB cable (for the loading of captured images, etc.). Check to see if the computer meets these requirements before connecting the camera.

■ OS: Microsoft Windows 98/98SE/Me/2000/XP

■ Preinstalled with a USB interface (Ver. 1.1)

■ Preconfigured with a CD-ROM drive

- The OS must be preinstalled. Proper operation cannot be guaranteed on a custom computer or in an upgraded OS, even if it is one of the systems specified above.
- The correct operation cannot be guaranteed if the HDC-401EX is connected via a USB hub or extended USB board.
- You may not be able to operate the HDC-401EX correctly on the computer, depending on the peripheral configuration.

Windows 98/98SE

→Proceed to **2**, Installing the HDC-401EX Driver in the Computer P79 .

Windows Me/2000/XP

→Proceed to **3**, Connecting the HDC-401EX to the Computer Using the USB Cable P81 .

2 Installing the HDC-401EX Driver in the Computer

(Windows 98/98SE)

If your computer is running Windows 98/98SE, the HDC-401EX driver must be installed in the computer first. Install the HDC-401EX driver in the computer through the procedure specified below.

- Once the driver has been installed properly, you can skip this procedure from the next time you connect your HDC-401EX to the computer.
- If you have any difficulty in driver installation. Please access following URL.
<http://www.hitachi-ls.co.jp/e/index.html>
- If your computer is running Windows Me/2000/XP, the driver will be installed automatically, so this procedure need not be performed.

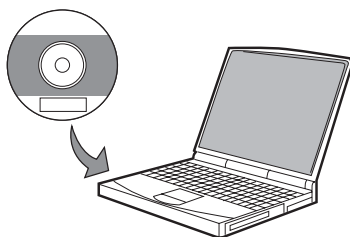
→ Proceed to **3, Connecting the HDC-401EX to the Computer Using the USB Cable** P81

Installing the HDC-401EX Driver (for Windows 98/98SE) ~ Restarting the Computer

Do not connect the camera to the computer until the software installation is complete. Also, be sure to close all other applications beforehand.

- 1** Start the computer and set the CD-ROM supplied with your HDC-401EX in the computer's CD-ROM drive. The installation menu is displayed automatically.

- If the installation menu is not displayed, open **My Computer** and double-click **Setup(.exe)** under **HDC-401EX**.



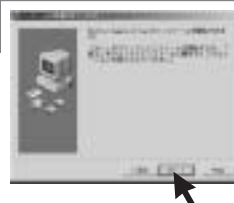
- 2** Click **Install HDC-401EX Driver**.



- 3** When the **Welcome** wizard screen is displayed, click **Next**.

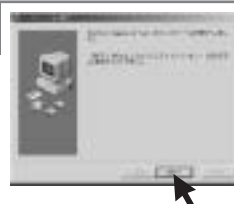


- 4** When the **The computer is ready to install the driver** screen is displayed, click **Next**.



The installation starts, and when it's finished the **Installation is completed** screen is displayed.

- 5** When the **Installation is completed** screen is displayed, click **Finish**.



- 6** When the **Install (restart confirmation)** screen is displayed, click **OK**.



The computer restarts and completes the driver installation.

When the installation is complete, proceed to **3 Connecting the HDC-401EX to the Computer Using the USB Cable** P81.

- To uninstall (delete) the HDC-401EX driver, follow the procedure under **Uninstalling (Deleting) the HDC-401EX Driver** P87.

3 Connecting the HDC-401EX to the Computer Using the USB Cable

- If your computer is running Windows 98/98SE, you must perform the procedure specified under **Installing the HDC-401EX Driver in the Computer P79** before you can connect your HDC-401EX to the computer.
- Before connecting the HDC-401EX to the computer, be sure to turn off the camera power.
- When connecting the HDC-401EX to the computer, be sure to check the remaining battery power. Although the Power Off Time function is disabled while the camera is connected to the computer, the camera will turn off if the batteries are exhausted. If the camera is turned off while connecting, the computer may not operate correctly or recorded data may be damaged. If the camera is to remain connected to the computer for a long period of time, use of the AC adapter (sold separately) is recommended.

Using the AC Adapter P51

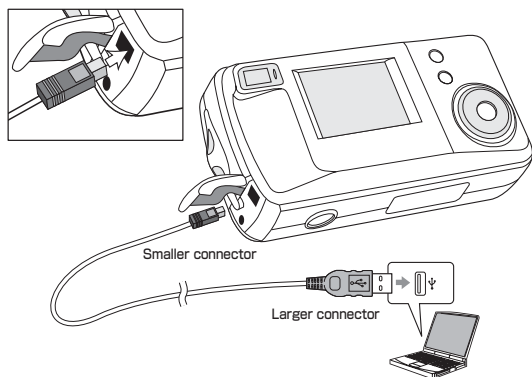
1

Turn off the power.

Check to see if the camera power is turned off. If the camera is still on, press the power switch to turn off the power.

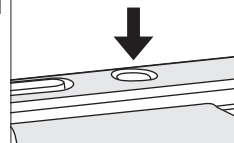
2

Plug the larger connector of the USB cable into the USB port on the computer, and firmly insert the smaller connector into the USB terminal on the camera.



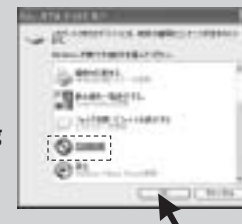
3

Turn on the power.



Press the power switch to turn on the camera power.

- If your HDC-401EX was connected to the computer for the first time, the New Hardware wizard is displayed. It will quickly navigate you through the necessary steps so that the computer can automatically recognize the HDC-401EX. Wait for a while until the setting is completed and the wizard disappears.
- If the **New Hardware Search** wizard screen is displayed, click **Next** and follow the on-screen instructions. When the **Search Wizard is Completed** screen is displayed, click **Finish**.
- In Windows XP, the OS's Automatic Recovery wizard is displayed. Click **Do not do anything** and then click **OK**.



4

The HDC-401EX is recognized as a removable disk.

A removable disk is displayed under My Computer.

Notes on USB Connection

- The LCD monitor shows **USB Mode**, and images and other data won't be displayed.
 - The power off time function is disabled.
 - Power won't be supplied to the HDC-401EX from the computer.
 - Do not disconnect the USB cable or touch the camera (interface cover, control panel, shutter button, etc.) while the HDC-401EX is communicating with the computer. Doing so may damage the stored data.
- When disconnecting the HDC-401EX, be sure to operate in accordance with **Removing the HDC-401EX P85**.

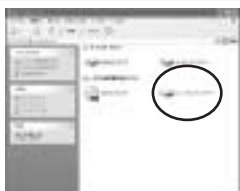
4 Copying Image Files to the Computer (Reader/Writer Connection)

- If your computer is running Windows 98/98SE, you must perform the procedure specified under **2 Installing the HDC-401EX Driver in the Computer P79** before you can connect your HDC-401EX to the computer.
- If you want to edit image files using commercially available image-editing software, etc., it is recommended that you copy the image files to a desired location (**My Documents**, etc.) in the computer.

1 Connect the HDC-401EX to the computer using the USB cable in accordance with **3, Connecting the HDC-401EX to the Computer Using the USB Cable P81**.

- If a removable disk is not displayed, see **Troubleshooting P89**.

2 Open **My Computer** and then double-click the removable disk.



3 Double-click the **DCIM** folder.



4 Double-click the **100 IMAGE** folder.



5



In the folder, select the image files you want to copy (load) to the computer, and then drag and drop them to a desired location (**My Documents**, etc.).

Drag and Drop

This method of computer operation uses a mouse. Specifically, it refers to moving data or files using your mouse. With the mouse pointer over the desired file icon or other symbol shown on the screen, press the mouse button and move the mouse (drag) while holding down the button, and then release the button (drop) when the icon reaches the target location.

- Similarly, you can drag and drop the desired data in a desired location (**My Computer**, etc.) of the computer into the folder (camera), thereby copying the data to the folder.

- During the Copy process (communication), the viewfinder lamp (red) on the camera blinks continuously. Never disconnect the USB cable or touch the camera (interface cover, control panel, **MODE** button, **MENU** button, shutter, etc.) while the viewfinder lamp is blinking. Doing so may damage the stored data.
- All data copied to the folder (camera) is deleted by **Formatting P74**. Exercise caution.

Folder/File Naming Rules

The HDC-401EX will assign folder and file names automatically according to the following rules.

Folder name:

XXXIMAGE

Consecutive folder number (100~999)

File name:

CAM_YYYY.jpg (video file: MPG_YYYY.mpg)

Consecutive file number (0001 to 9999)

When the file number reaches 9999, the next file is saved in a new folder having the next higher folder number.

5 Removing the Camera

- When removing the HDC-401EX, be sure to follow the procedure below. If the camera is removed or the USB cable is disconnected without following the specified operation, the computer may not operate correctly or the recorded data may be damaged.
- This operation is not necessary if your computer is running Windows 98/98SE.

1 Close all applications accessing the camera.

2 Click the Remove Hardware icon on the taskbar, select the drive you want to remove and then click **Stop (Remove)**.



Task bar

<WindowsMe>



<Windows2000>



<WindowsXP>



When **Stop (Remove)** is clicked, a warning screen may be displayed with the message **Camera cannot be stopped**. In this case, check to see if the camera is still communicating with the computer. Remove the camera once communication has ended.

3 When the **You can safely remove the device** dialog box is displayed, click **OK**.

(This step is not necessary in Windows XP.)


4 Remove the camera.

Before removing the camera, be sure to confirm that the camera is not communicating with the computer (i.e. its viewfinder lamp (red) is not blinking).

■ **Uninstalling (Deleting) the HDC-401EX Driver**


- The HDC-401EX Driver must be installed if your computer is running Windows 98/98SE. Uninstall (delete) the HDC-401EX driver only when the driver is no longer necessary.
- Do not uninstall the driver while the camera is still connected to the computer. Also, close all computer applications beforehand.

1




In **My Computer**, double-click **Control Panel** and then double-click **Add or Remove Programs**.

2




Select **HDC-401EX** and then click **Add (Change) or Remove**.

3



When the **Select Uninstall Method** screen is displayed, select **Automatic** from the options and then click **Next**.

4



When the **Perform Uninstall** screen is displayed, click **Finish**.

Once **Finish** is clicked, the computer will begin uninstalling the driver. Confirm that you really want to uninstall the driver before clicking **Finish**.

Appendix

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Appendix









Troubleshooting

Batteries/Power

Problem	Cause	Action
The camera doesn't turn on.	• The batteries are not set correctly.	→Set the batteries correctly P17 .
	• Battery power is exhausted.	→Replace the batteries with new ones P17 .
	• Malfunction of the internal system, etc.	→Remove/disconnect the batteries/AC adapter and wait five seconds or more, set/connect the batteries/AC adapter correctly and then press the power button.
	• The AC adapter (sold separately) is not connected correctly.	→Connect the AC adapter (sold separately) correctly P51 .
The batteries run out quickly.	• The camera is used in extremely cold temperatures.	—
	• Images are captured at high resolutions or the flash is used frequently.	—
The camera turns off suddenly.	• The Power Off Time function was activated.	→Turn on the power again.
	• Battery power is exhausted.	→Replace the batteries with new ones P17 .
The remaining battery power is not displayed correctly.	• The camera is used in extremely high or low temperatures.	—
	• Battery power is exhausted.	→Replace the batteries with new ones P17 .
	• The flash is being charged (immediately after switching to the flash mode).	→Wait until the flash is fully charged.

Capturing Still Images/Videos

Problem	Cause	Action
The LCD monitor doesn't show the subjects.	• The camera is in Playback mode.	→Press the MODE button to switch to Still Image Capture mode P11 .
	• The LCD monitor display is set to the Display Off mode.	→Press the display IC button ([▶]) to switch the LCD monitor display mode P15 .

Problem	Cause	Action
Image/video cannot be captured.	• The shutter button was pressed while another image was being recorded.	→Wait until the recording of the current image finishes before capturing a new image.
	• The shutter button was pressed while the flash was charging.	→Wait until the viewfinder lamp stops blinking before capturing an image.
	• Still images were taken while the camera was in Playback mode or Video Capture mode.	→Press the MODE button to switch to Still Image Capture mode P11 .
	• Videos were taken when the camera was in Still Image Capture mode or Playback mode.	→In the Still Image Capture mode, press the MENU button and then select Video Capture mode P33 .
	• The Power Off Time function was activated and the camera was turned off.	→Turn on the power again.
	• The available memory space is low.	→Reduce the image size. →Delete images from the internal memory or the memory card P39 , or swap the memory card with another P23 .
The flash doesn't work.	• The write-protect switch on the memory card is locked (the message Card Locked! is shown on the LCD monitor).	→Unlock the write-protect switch on the memory card P24 .
	• The flash mode is set to  (Suppressed Flash (default setting)).	→Set the flash mode to  (Auto),  (Red-Eye Reduction (Auto)),  (Night Scene), or  (Forced Flash) P30 .
	• The camera is in Close-Up  mode.	→Switch to Standard  mode and then select the flash mode again P31 .
The flash was used but the captured image is still dark.	• The subjects are too bright.	→Switch to the forced flash mode P30 .
	• The subjects are too far away.	→Bring the subjects within the effective flash-interlocked range (approximately 1.1 to 2.1m) P30 .
Captured images are blurred.	• The user's fingers are covering the lens.	→Hold the camera correctly without the fingers covering the lens.
	• Distant scenes are captured in Close-Up mode.	→Switch to Standard  mode (approximately 110 cm or longer) P31 .
	• The subjects are too close.	→Bring the subjects within the image capture range (approximately 55 to 110 cm in Close-Up mode, or approximately 110 cm or more in Standard mode)

Problem	Cause	Action
Captured images are blurred.	• The camera is shaking.	→Use a tripod, etc., to keep the camera as still as possible.
Images are affected by video noise.	• The camera is used near a computer or is otherwise subject to a strong electromagnetic field.	—
Video capture aborts.	• There is not enough memory.	→Delete images from the internal memory or the memory card P39 , or swap the memory card with another P23 .
Still images/videos can be viewed but cannot be captured.	• Battery power is exhausted.	→Replace the batteries with new ones P17 .
Data cannot be recorded to the internal 16 MB flash memory.	• A memory card is installed.	→Turn off the power and remove the memory card P24 .
When setting the layout, the image on the LCD screen moves with tails.	• In a dark place, the shutter speed drops and camera shake increases, which is the cause of trailing images. Use a tripod, etc., to keep the camera from moving.	—

Viewing Still images/videos

Problem	Cause	Action
Still images/videos cannot be played.	• The camera is not in Playback mode.	→Press the MODE button to switch to Playback mode P11 .
	• The HDC-401EX may not be able to play images that were captured on another digital camera or renamed/manipulated on a computer.	—

Deleting Images

Problem	Cause	Action
Images cannot be deleted.	• The write-protect switch on the memory card is locked (the message Card Locked! is shown on the LCD monitor).	→Unlock the write-protect switch on the memory card P24 .
Images were accidentally deleted.	• Deleted files cannot be restored.	—

Playback/Capture Using a TV

Problem	Cause	Action
Images are not displayed on the TV.	• The TV's input mode is not set correctly.	→Set the input mode of the TV to VIDEO IN
	• The video cable is not properly connected.	→Disconnect the video cable from the TV and camera, and then firmly reconnect it.
Images on the TV are abnormal (not in color, etc.)	• Video Mode is set to NTSC .	→Switch to PAL P44 .

Copying Image Files to a Computer

Problem	Cause	Action
The computer doesn't recognize the camera (removable disk is not displayed, etc.).	• The supplied USB cable is not being used.	→Use the supplied USB cable.
	• The USB cable is not properly connected.	→Disconnect the cable from the computer and camera, and then firmly reconnect it P81 . →Connect to another USB port.
	• Another device is connected to the computer's USB port.	→Remove all peripheral devices other than the keyboard and mouse.
	• The HDC-401EX driver is not installed. (This is applicable only when the computer is running Windows 98/98SE.)	→Install the HDC-401EX Driver P79 .
	• The camera was connected to the computer running Windows 98/98SE before the HDC-401EX driver was installed, so the device was not properly recognized. Open Device Manager and check to see if a corresponding entry is found under Other Devices .	→If an entry for an unrecognized device (accompanied by a "?" symbol) is found under Other Devices , delete the entry, restart the computer and then install the HDC-401EX driver P79 .

Problem	Cause	Action
The computer doesn't recognize the camera (no removable disk is displayed, etc.).	<ul style="list-style-type: none"> Another driver or camera is interfering with the HDC-401EX driver operation. Open Device Manager and check to see if USB (Universal Serial Bus Controller) is found. 	→If USB Mass Storage Device is accompanied by a yellow "!" symbol, delete USB Mass Storage Device , disconnect the camera and then reconnect it.
	<ul style="list-style-type: none"> The computer's USB function is not enabled. Open Device Manager and check to see if USB (Universal Serial Bus Controller) is found. 	→If USB (Universal Serial Bus Controller) is not displayed, it means the USB function is disabled. Enable the USB function by following the applicable instruction in the user manual for the computer. →If USB (Universal Serial Bus Controller) is accompanied by a yellow "!" or a red "X," it means the USB function is not operating. Set the USB function properly by following the corresponding instructions in the computer's user manual.
The camera turns off during USB connection.	<ul style="list-style-type: none"> The USB cable is not properly connected. 	→Disconnect the cable from the computer and camera, and then firmly reconnect P81 . →Connect the cable to other USB port.
	<ul style="list-style-type: none"> The camera is connected to the computer via a USB hub. 	→Connect the camera directly to the computer without using a USB hub, etc.
	<ul style="list-style-type: none"> Battery power is exhausted. 	→Replace the batteries with new ones P17 .
A warning message was displayed when the camera was removed.	<ul style="list-style-type: none"> The camera was removed when it was still communicating with the computer. 	→Doing so may damage the internal data. Always confirm that the camera is not communicating with the computer before removing the camera.
	<ul style="list-style-type: none"> The camera was removed in a manner contrary to the removal operation. 	→Follow the operation under Removing the Camera P85 .

⟨Device Manager⟩

To open **Device Manager**, right-click on **My Computer**, click **Properties** and then click **Device Manager**. Alternatively, open **Control Panel**, double-click **System**, click **System Properties** and then click **Device Manager**.



Others

Problem	Cause	Action
The display is in Japanese.	<ul style="list-style-type: none"> Language is set to Japanese. 	→Switch Language to English P47 .
The LCD monitor temporarily shows black dots, or white, red, blue or green dots appear for a longer period.	<ul style="list-style-type: none"> These phenomena are caused by the properties of the liquid crystal display. 	→It is not a malfunction. The dots appear only on the LCD monitor and will not be recorded.
The digital zoom doesn't work.	<ul style="list-style-type: none"> The LCD monitor is set to the display off mode. 	→Press the display ⏻ button (▶▶) to switch the LCD monitor display mode P15 .
	<ul style="list-style-type: none"> The camera is in the Video Capture mode. 	→Press the MODE button to switch to the Still Image Capture mode P11 .
The camera cannot be operated (the finder lamp doesn't turn off, etc.)	<ul style="list-style-type: none"> Malfunction of the internal system, memory card, etc. 	→Remove the batteries, wait for a while and then reinstall the batteries. →Remove the memory card from the camera and then reinstall it securely P23 . →Swap with another memory card and check to see if the problem no longer occurs. →Consult the store from which you purchased the camera.
	<ul style="list-style-type: none"> Battery power is exhausted. 	→Replace the batteries with new ones P17 .
Date Imprint was set but the date is not displayed.	<ul style="list-style-type: none"> The background is white. Since the date imprint uses white text, it may not be visible. 	—
	<ul style="list-style-type: none"> The image was captured using the digital zoom. 	→Do not use the digital zoom P32 .
A red viewfinder lamp sometimes blinks.	<ul style="list-style-type: none"> The flash is charging to maintain a stable flash level. 	—

Warnings and Messages

Problem	Cause	Action
Card locked!	<ul style="list-style-type: none"> The write-protect switch on the memory card is locked. 	→Unlock the write-protect switch on the memory card P24 .
Card full	<ul style="list-style-type: none"> There is insufficient space available in the internal memory or the memory card. 	→Delete images from the internal memory or the memory card P39 , or swap the memory card with another P23 . →Change the image size and/or image quality P53 .
No image	<ul style="list-style-type: none"> There are no image files that can be played. 	→Capture images using the HDC-401EX.
Lens Cover Closed	<ul style="list-style-type: none"> The lens cover is closed. 	→Open the lens cover.
Low battery	<ul style="list-style-type: none"> Battery power is exhausted. 	→Replace the batteries with new ones P17 .
File Protect	<ul style="list-style-type: none"> The image is protected. 	→Unlock the image P69 .

Menu Items and Default Settings

Menu item	Setting
Mode	Still Image Capture mode P27 / Playback mode P35
C a p t u r e M e n u	Set To Default P25 → Return certain items to their default settings.
	Video Capture Mode P33 → Switch to Video Capture mode.
	Image size P52 → [2304×1728]/1600×1200/1280×960/640×480
	Image quality P52 → ☆ Fine/[☆ Normal]/ ☆ Economy
	Scene P55 → [Auto]/ ⚡ Sports/ ⚡ Night Scene/ 👤 Portrait/ ⚡ Landscape/ ⚡ Back Light
	EV P57 → [Auto]/-2.0EV~+2.0EV (Set in 0.5-EV steps)
	White balance P58 → [Auto]/ ☀ Daylight/ ☁ Cloudy/ 🌅 Sunset/ 🔥 Tungsten/ 💡 Fluorescent
	Quick view P27 → [On]/ Off
	ISO P62 → [Auto]/ 100 ISO100 / 200 ISO200
	Color P61 → [Full color]/ [Black & White]/ [Sepia
	Saturation P60 → [High/ [Medium]/ [Low
	Sharpness P59 → [High/ [Medium]/ [Low
	Date Imprint P63 → On / [Off]
	Setup → Display the Setup menu.
	Exit → Return to Still Image or Video Capture mode.
P l a y b a c k M e n u	Delete P74 → This image/Delete All/Format/Exit
	Protect P69 → This image/Protect All/Exit
	Copy to card P65 → Copy images from the internal memory to the SD memory card.
	Display mode P15 → [Default]/Details/Image Only
	Slide show P67 → 1 sec./3 sec./6 sec./10 sec./Exit
	Save as logo P72 → [Default]/Customize/Exit
	Setup → Display the Setup menu.
S e t u p M e n u	Exit → Return to the previous menu.
	Set To Default → Return certain items to their default settings
	Date&Time P20 → Date/Time/Mode/Exit
	Mode P21 → YYYY/MM/DD 24hr / YYYY/MM/DD 12hr DD/MM/YYYY 24hr / DD/MM/YYYY 12hr MM/DD/YYYY 24hr / MM/DD/YYYY 12hr
	TV P44 → [PAL]/NTSC
	Beeper P49 → [On]/Off
	Language P47 → Japanese/[English]/Italian/Spanish/French/German/ Chinese1 (简体中文)/Chinese2 (繁體中文)
	Power Off Time P50 → 1 min / [3 min]/ 5 min/10 min/Off

[] : Default, [] : Factory-setting --- These settings are retained even after **Set to Default** is selected.

■ Specifications

Effective resolution		Approximately 4 million pixels					
Capture element		1/1.8" CCD image sensor (Total pixels: Approximately 4.08 million)					
Recording media		SD memory card (32, 64, 128, 256 and 512 MB compatible) (#1), internal 16 MB flash memory (#2)					
Still image	File format for recorded image	JPEG compliant (DCF1.0, EXIF2.2 compliant)					
	Recording resolution	2304x1728 (Approx. 4 million pixels) 1600x1200 (1.92 million pixels) 1280x960 (Approx. 1.23 million pixels) 640x480 (Approx. 310,000 pixels)					
	JPEG compression ratio	Fine (Low compression (1/8) mode) Normal (Standard compression (1/12) mode) Economy (High compression (1/16) mode)					
Video	Recording image file format	MPEG1 (no sound)					
	Recording resolution, frame rate	320x240pixels, 24 frames/sec.					
Number of recordable images/ recording time and data size (#3)		Recording resolution (pixels)	JPEG compression ratio	Data size per frame	Internal 16 MB flash memory	32 MB SD memory card	
		2304x1728 (Approx.4million pixels)	Fine	Approx. 1,500 KB	Approximately 9 images	Approximately 20 images	
			Normal	Approx. 1,000 KB	Approximately 14 images	Approximately 31 images	
			Economy	Approx. 750 KB	Approximately 19 images	Approximately 41 images	
		1600x1200 (Approx.1.92million pixels)	Fine	Approx. 720 KB	Approximately 20 images	Approximately 43 images	
			Normal	Approx. 480 KB	Approximately 29 images	Approximately 63 images	
			Economy	Approx. 360 KB	Approximately 40 images	Approximately 86 images	
		1280x960 (Approx.1.23million pixels)	Fine	Approx. 460 KB	Approximately 31 images	Approximately 67 images	
			Normal	Approx. 310 KB	Approximately 47 images	Approximately 101 images	
			Economy	Approx. 230 KB	Approximately 59 images	Approximately 126 images	
640x480 (Approx.310,000 pixels)	Fine	Approx. 115 KB	Approximately 112 images	Approximately 236 images			
	Normal	Approx. 77 KB	Approximately 179 images	Approximately 379 images			
	Economy	Approx. 58 KB	Approximately 224 images	Approximately 473 images			
320x240 [Video]		□	Approx. 231 KB/sec.	Approx. 61 sec.	Approx. 128 sec.		
Lens	Structure	Three groups, five lenses (one aspheric lens)					
	Focus distance	f = 7.7 mm [equivalent to 37 mm on a 35 mm film camera]					
	F value	F3.5					
Focus adjustment		Fixed focus system					
Zoom		Digital zoom: 200%					
LCD monitor		1.5" TFT color LCD, approx. 60,000 pixels (280 x 220 pixels)					
Viewfinder		LCD monitor/reverse Galileo optical viewfinder (field of view: 80% or more (1 to 3 m); magnification: 0.34X)					
Image capture range		Approx. 110 cm or longer (Standard), approx. 55 to 110 cm (Close-Up mode)					
Shutter		Mechanical shutter, 1/4 to 1/1000 sec.					
Capture sensitivity		Auto, equivalent to ISO 100 and ISO 200					
Photometry system		Center-weighted photometric averaging (64-point photometry)					
Exposure	Control system	Programmed AE					
	Correction	Auto, -2.0 EV to +2.0 EV (set in 0.5-EV steps)					
White balance		Auto/Daylight/Cloudy/Tungsten/Fluorescent/Sunset					
Flash	Interlocked range (recommended) (#4)	Approx. 0.6 to 2.1 m					
	Flash modes	Auto, Red-Eye Reduction (Auto), Suppressed Flash, Forced Flash					
Self-timer		Timer period: 10 sec., 5 sec.					
Scene modes		Auto/Sports/Night Scene/Portrait/Landscape/Back Light					
Playback modes		Single (100, 200, 300 or 400%), Index, Slide Show, Video					
Power off time		1min./3min./5min./10min./Off					
Interface		USB (ver. 1.1, mini-B), Video output (NTSC/PAL switching), DC input (DC 2.5 A/3.0 V)					
Power supply		AA dry battery x 2 (alkaline dry batteries/nickel metal hydride batteries (sold separately), AC adapter (sold separately))					
Battery life (#5)							
		Battery type	Continuous	Cyclic		Playback time	
		AA alkaline dry battery LR6	Approx. 900 images	Approx. 200 images	Approx. 500 images		
Dimensions, weight		96 (W) x 30 (D) x 51.5 (H) mm (excluding projections), approx. 110 g (excluding batteries and accessories)					
Usage condition		0 to 40°C, RH90% or less (non-condensing)					
Accessories		Dedicated USB cable, installation CD-ROM, dedicated video cable, neck strap, camera case, cleaner, AA alkaline dry batteries (2)					

- (※1) The HDC-401EX doesn't come with an SD memory card.
- (※2) The internal flash memory has an effective storage area of approximately 14 MB, since it already contains program files.
- (※3) The numbers of recordable images/recording times and data sizes are reference values. The actual figures will vary according to the subject and conditions of image capture.
- (※4) In the Close-Up mode the effective interlocked time (recommended) is approximately 1.1 to 2.1 m because the flash is disabled.
- (※5) The number of images and playback time are reference values until the batteries go flat, assuming that images are captured in a standard environment in the 2304 x 1728/normal mode under the following conditions and played continuously at a speed of approximately three seconds per frame. They are not guaranteed. The actual figures may be lower, depending on the condition or environment in which the camera is used.

[Continuous] Images are captured continuously without flash.

[Cyclic] Images are captured by repeating the sequence of "Checking the subjects for five seconds" → "Capture" → "Playback for five seconds."

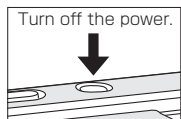
※In both modes, all images are erased once the memory is full.

Memo

Using the Camera For details, see Capturing Still Images P27

If you are using a memory card, insert the memory card before turning on the camera power by following the instructions under **Using an SD Memory Card P23**.

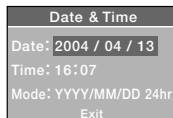
- 1 Turn off the power. Open the lens cover and turn on the power.



If you are using your HDC-401EX for the first time or after a long period of storage with the batteries removed from the camera, the internal clock may be reset when the power is turned on, in which case the date/time setting screen is displayed.

How to Set the Date and Time Setting the Date and Time P20

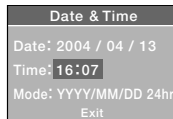
- ① Use **[▲][▼]** to select the part of **Date** you want to set, and then press **[OK]**.



- ② Set the year, month and date using the control panel. Once the setting is complete, press **[OK]**.

[▲][▼] : Increase and decrease. **[◀][▶]** **[OK]** : Move through the items and confirm the set value.

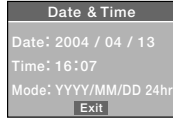
- ③ Use **[▲][▼]** to select the part of **Time** you want to set, and then press **[OK]**.



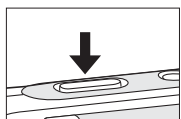
- ④ Set the hours and minutes using the control panel. Once the minutes are set, press **[OK]**.

[▲][▼] : Increase and decrease. **[◀][▶]** **[OK]** : Move through the items and confirm the set value.

- ⑤ Select **Exit** using **[▲][▼]** and then press **[OK]**.



- 2 Set the layout so that you can see the subjects inside the LCD monitor, and then press the shutter.



• When the image has been captured, a "bleep" sound will be heard.

Viewing the Captured Images/Videos See Viewing Still Images/Videos P35 for details.

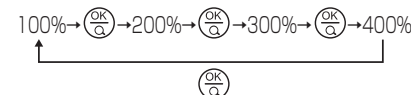
- 1 Press **MODE** once to activate the Playback mode. The last captured image is displayed (single playback).



- 2 Select the desired image using **[◀][▶]**.



Zoom Playback : Images displayed in Single Playback mode can be enlarged to 200, 300 or 400%.



- Press **[▲][▼][◀][▶]** on an enlarged view to change the displayed portion of the image.

Index Playback : Pressing the index **[■]** button (**[▲]**) while in Single Playback mode will let you display multiple images by dividing the LCD monitor into nine areas.

Control Panel



Each button on the control panel has multiple functions. Note that **[▲]**, **[▼]**, **[◀]** and **[▶]** are not shown on the camera (control panel). For the functions of each button, see **Control Panel P12**.

Memo

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Memo

Lined area for writing on page 102.